PORTATONE

PSR-280/PSR-282

SERVICE MANUAL



PSR-280



PSR-282

■ CONTENTS

This document is printed on chlorine free (ECF) paper with soy ink.

PK 001641

YAMAHA

HAMAMATSU, JAPAN

1.43K-257 Printed in Japan '00.06

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: This presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is belived to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

Keyboards
- 61 standard-size keys (C1 - C6), with Touch Response and Dynamic Filter.

Display
- Large multi-function LCD display (backlit)

Setup
- STANDBY/ON
- MASTER VOLUME: MIN - MAX

Panel Controls
- OVERALL (L, R), SONG, VOICE, STYLE, PORTABLE GRAND, DJ, METRONOME, [0]-[9], [+](YES), [-](NO), DEMO, TOUCH, HARMONY, Dict., L, R, TEMPO/TAP

Voice
- 118 panel voices + 10 Drum Kits + 128 GM Voices
- Polyphony: 32
- Voice Set

Auto Accompaniment
- 100 styles
- Accompaniment Control: ACMP ON/OFF, SYNC STOP, SYNC START, START/STOP, INTRO/ENDING, MAIN A/B(AUTO FILL)
- Fingering : Multi fingering
- Accompaniment Volume

Yamaha Educational Suite
- Dictionary
- Lesson 1-4

One Touch Setting
- Voice (for each style or song)

Overall controls
- Transpose
- Tuning
- Accompaniment Volume
- Song Volume
- Metronome Volume
- MIDI
- Reverb
- DSP
- Harmony
- Grade
- Talking

Effects
- Reverb: 8 types
- DSP: 37 types
- Harmony: 26 types

Song
- 100 Songs + 5 User Songs
- Song Clear, Track Clear

Recording
- Song
  User Song: 5 Songs
  Real Time Recording
  Recording Tracks: 1, 2, 3, 4, 5, CHORD

MIDI
- Clock
- Bulk Send/Receive
- Initial Send

Auxiliary jacks
- PHONES/OUTPUT, DC IN 10-12 V, MIDI IN/OUT, SUSTAIN

Amplifier
- 3.0 W + 3.0 W

Speakers
- 12 cm x 2 + 3 cm x 2

Power Consumption
- 15 W (when using PA-3B power adaptor)

Power Supply
- Adaptor: Yamaha PA-3B AC power adaptor
- Batteries: Six “D” size, SUM-1, R-20 or equivalent batteries

Dimensions (W x D x H)
- 933 x 370 x 129 mm (36-3/4" x 14-5/8" x 5-1/6")

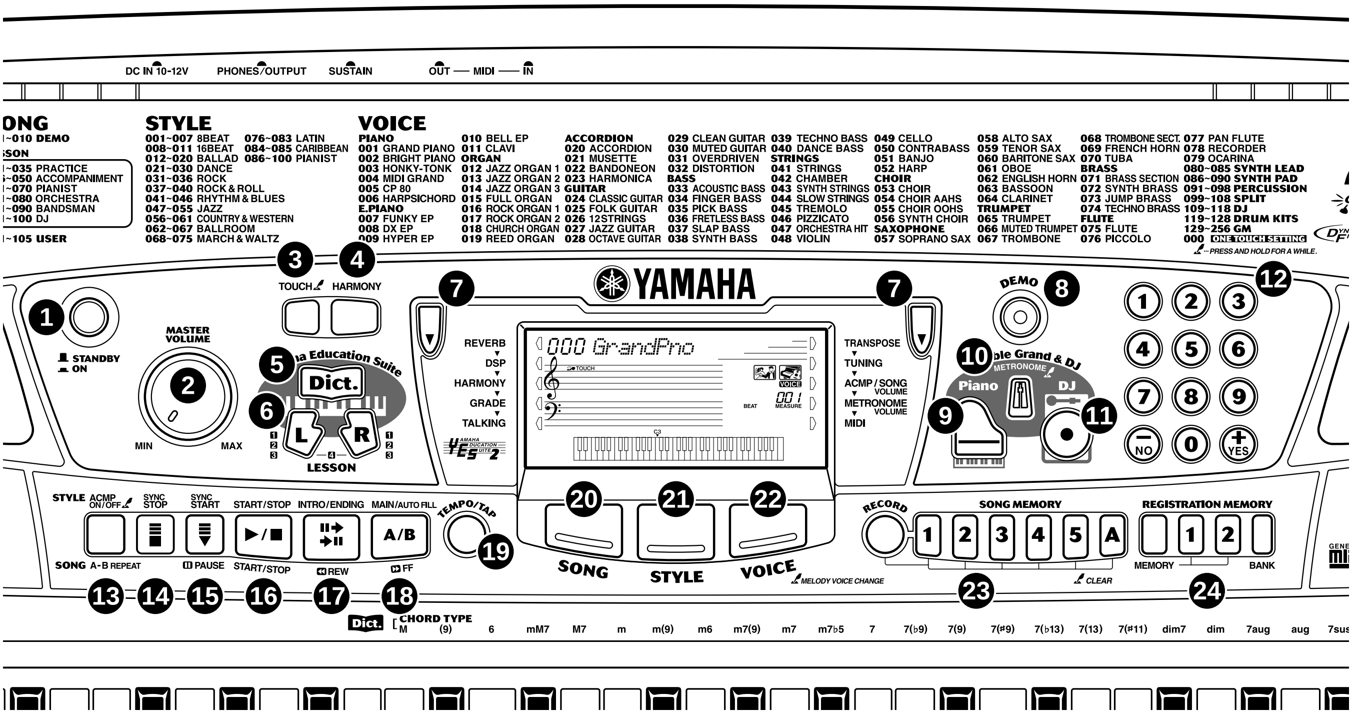
Weight
- 5.5 kg (12 lbs., 2 oz.)

Supplied Accessories
- Music Stand
- Owner’s Manual
- Song Book

Optional Accessories
- Headphones: HPE-150
- AC power adaptor: PA-3B
- Footswitch: FC4, FC5
- Keyboard stand: L-2L, L-2C

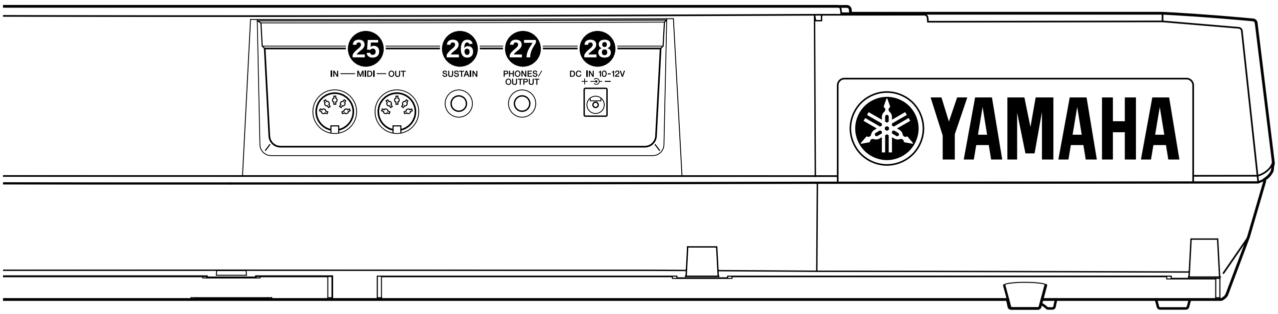
■ PANEL LAYOUT

● Front Panel



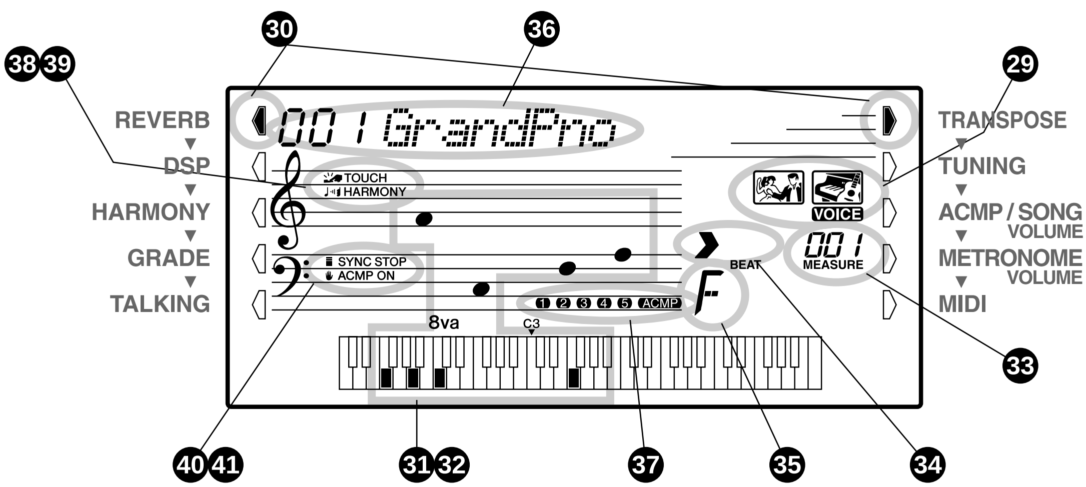
❶ Power switch ([STANDBY/ON])
❷ [MASTER VOLUME] dial
❸ [TOUCH] button
❹ [HARMONY] button
❺ [Dict.] (DICTIONARY) button
❻ LESSON [L] (Left) and [R] (Right) buttons
❼ Overall (left, right) buttons
❽ [DEMO] button
❾ [Piano] button
❿ [METRONOME] button
⓫ [DJ] button
⓬ Numeric keypad, [+/YES] and [-/NO] buttons
⓭ [ACMP ON/OFF] / [A-B REPEAT] button
⓮ [SYNC STOP] button
⓯ [SYNC START] / [⏸ PAUSE] button
⓰ [START/STOP] button
⓱ [INTRO/ENDING] / [⏪ REW] button
⓲ [MAIN/AUTO FILL] / [⏩ FF] button
⓳ [TEMPO/TAP] button
⓴ [SONG] button
㉑ [STYLE] button
㉒ [VOICE] button
㉓ [SONG MEMORY] buttons
㉔ REGISTRATION MEMORY buttons

- Rear Panel



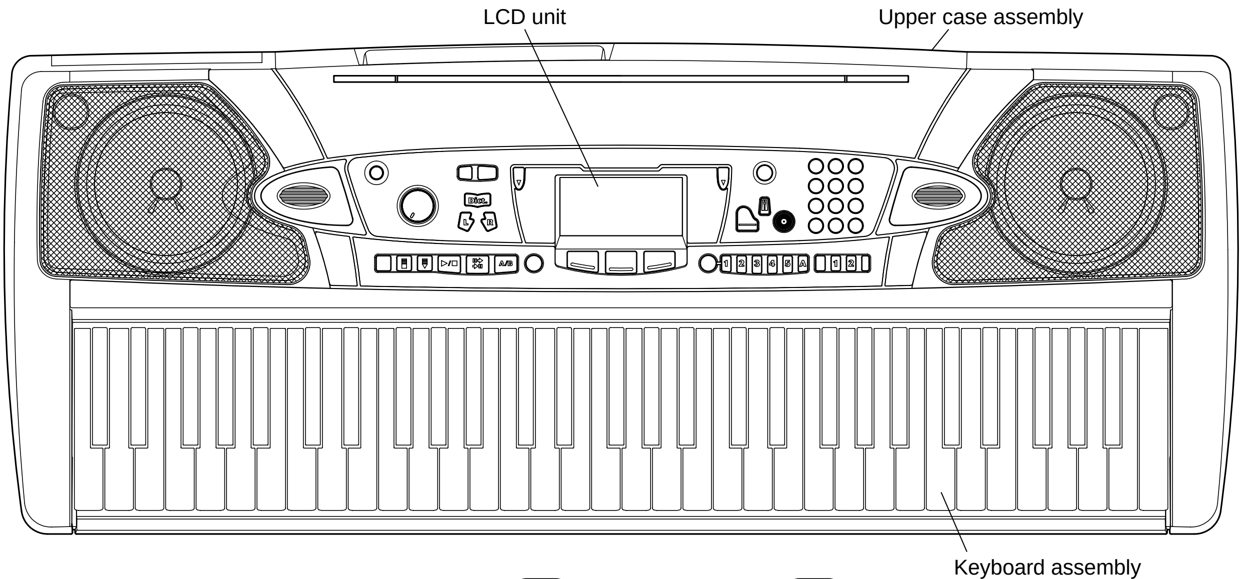
25 MIDI IN, OUT terminals
26 SUSTAIN jack
27 PHONES/OUTPUT jack
28 DC IN 10-12V jack

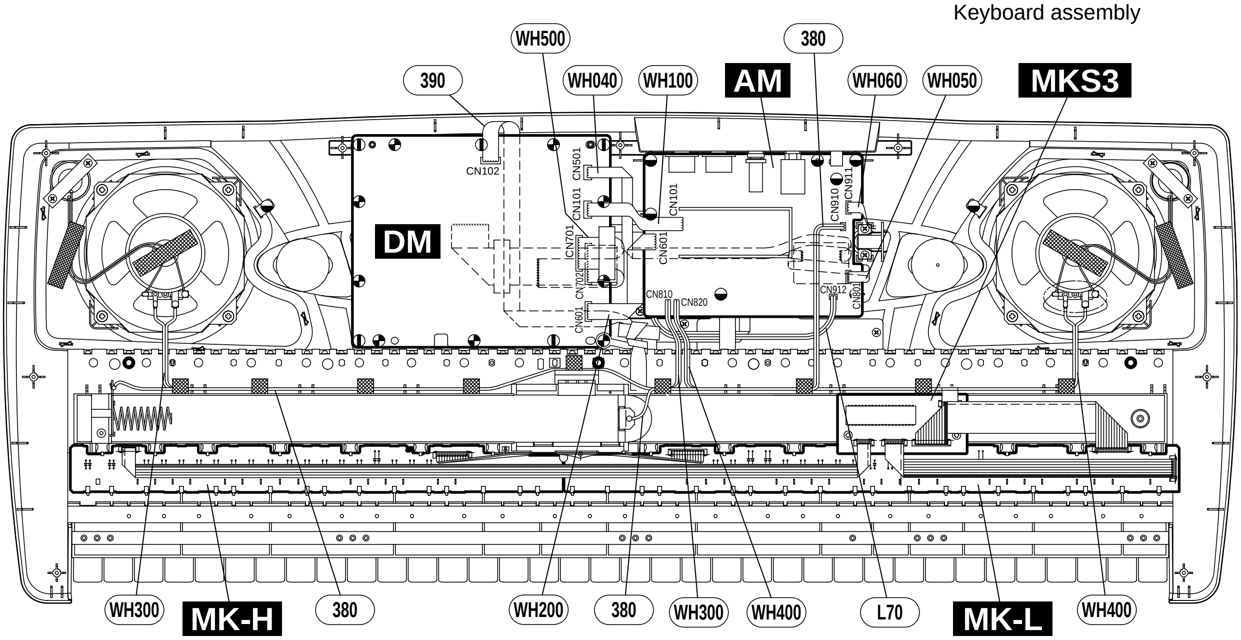
- Display

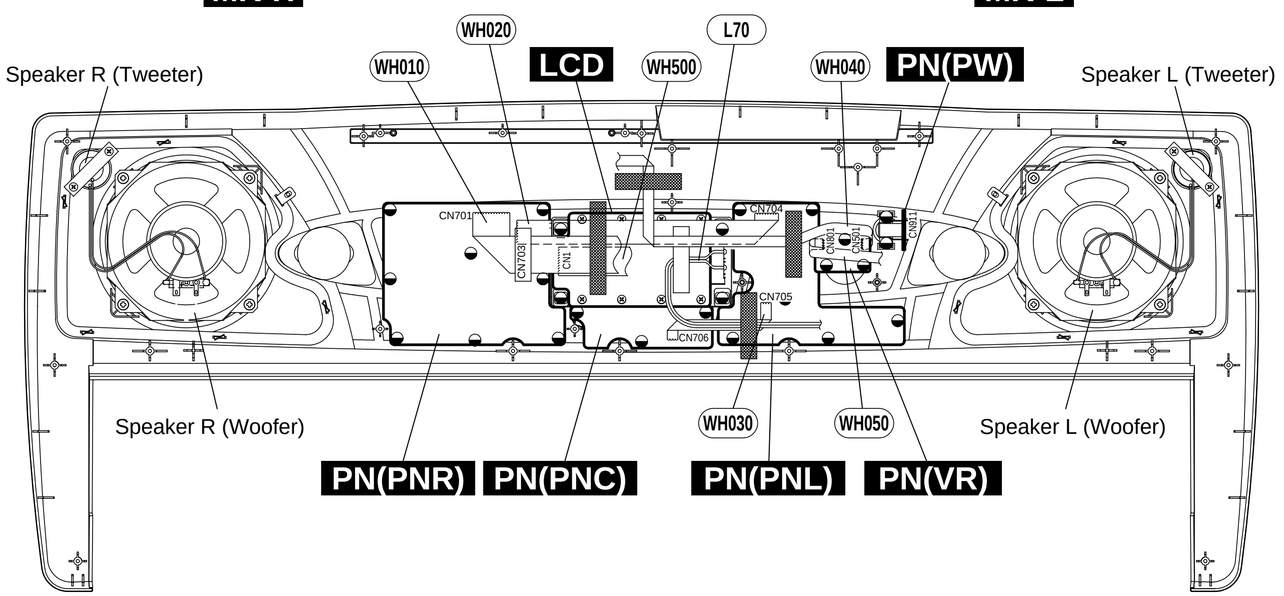


29 Indicators
30 Overall indicator
31 Notation
32 Keyboard
33 Measure
34 Beat marks
35 Chord
36 Song/Voice/Style name and number, Tempo
37 Song track indicators
38 Touch indicator
39 Harmony indicator
40 Sync Stop indicator
41 Accompaniment On indicator

■ CIRCUIT BOARD LAYOUT





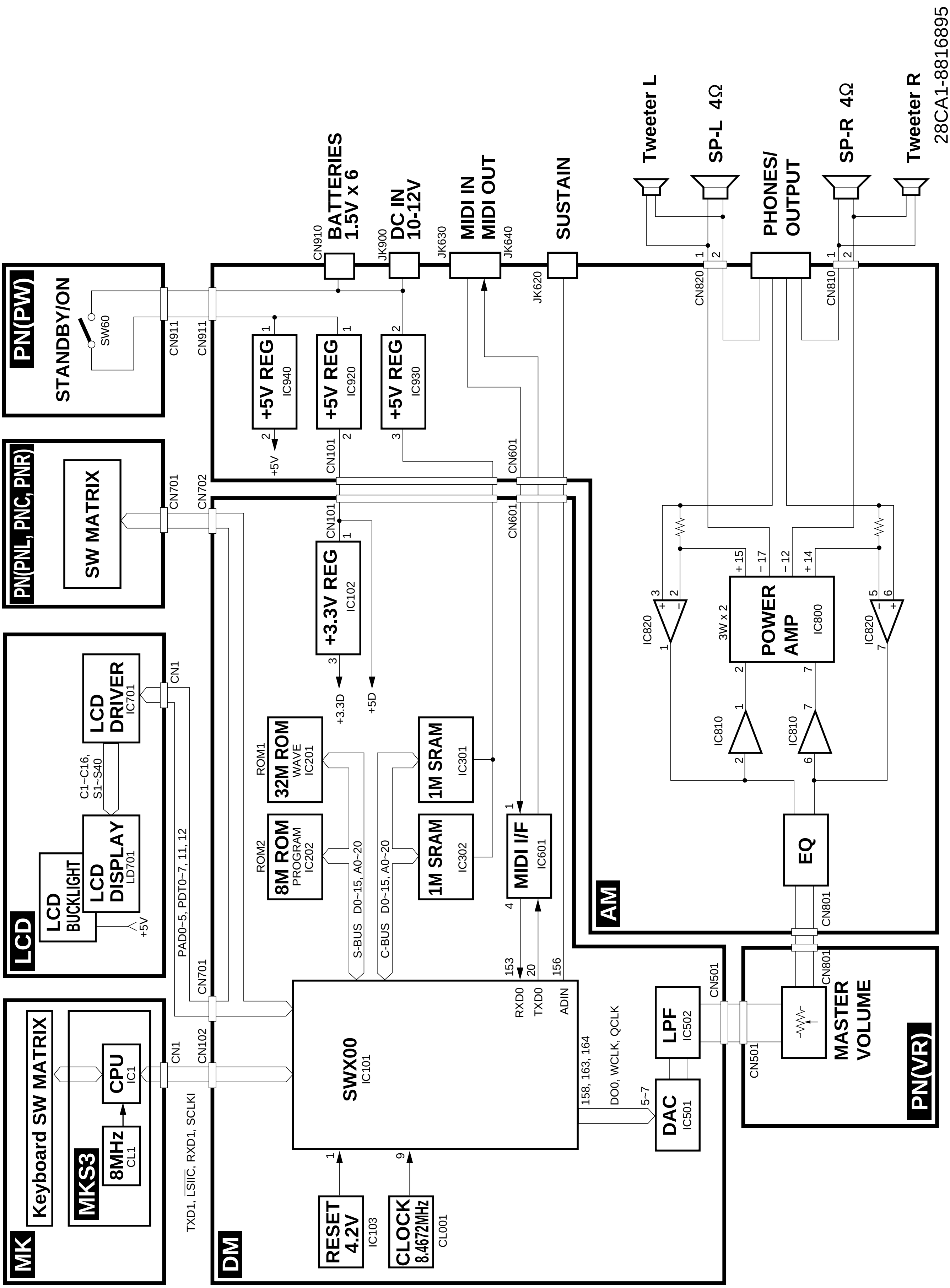


2NC-V524070△3

Location	Part No.	Connector Assembly	Destination		Remarks
WH010	(V539010)	DM-PN-R	PN(PNR)-CN701	DM-CN702	14P
WH020	(V539100)	PN-R-PN-L	PN(PNR)-CN703	PN(PNL)-CN704	9P
WH030	(V539110)	PN-L-PN-C	PN(PNL)-CN705	PN(PNC)-CN706	4P
WH040	(V539030)	DM-VR	PN(VR)-CN501	DM-CN501	4P
WH050	(V539060)	AM-VR	PN(VR)-CN801	AM-CN801	4P
WH060	(V539040)	AM-PSW	PN(PW)-CN911	AM-CN911	4P
WH100	(V538990)	DM-AM1	AM-CN101	DM-CN101	5P
WH200	(V539000)	DM-AM2	AM-CN601	DM-CN601	6P
WH300	(V539140)	AM-SP-R	AM-CN810	SPEAKER R SPEAKER R	2P
WH400	(V560490)	AM-SP-L	AM-CN820	SPEAKER L SPEAKER L	2P
WH500	(V538980)	DM-LCD	LCD-CN1	DM-CN701	12P
L70	(V539120)	AM-LCD	LCD UNIT	AM-CN912	2P
380	(V539130)	AM-POWER	POWER SUPPLY	AM-CN910	2P
390	(V616910)	DM-MKS	KEYBOARD ASSEMBLY	DM-CN102	6P

* Connector assembly listed above are not available as service parts.

■ BLOCK DIAGRAM

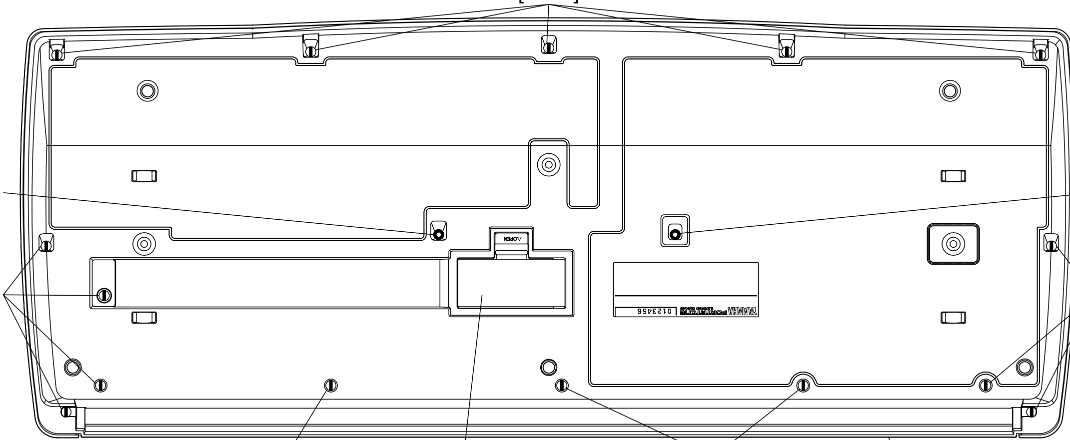


■ DISASSEMBLY PROCEDURE

1. Lower Case Assembly

1-1 Remove the battery cover assembly. (Fig. 1)

1-2 Remove the fifteen (15) screws marked [260A] and two (2) screws marked [270A]. The lower case assembly can then be removed. (Fig. 1)



[260A]: Bind Head Tapping Screw-P 3.0 x 12 MFZN2Y (EP600300) [270A]: Bind Head Tapping Screw-P 3.0 x 25 MFZN2Y (VK228100)

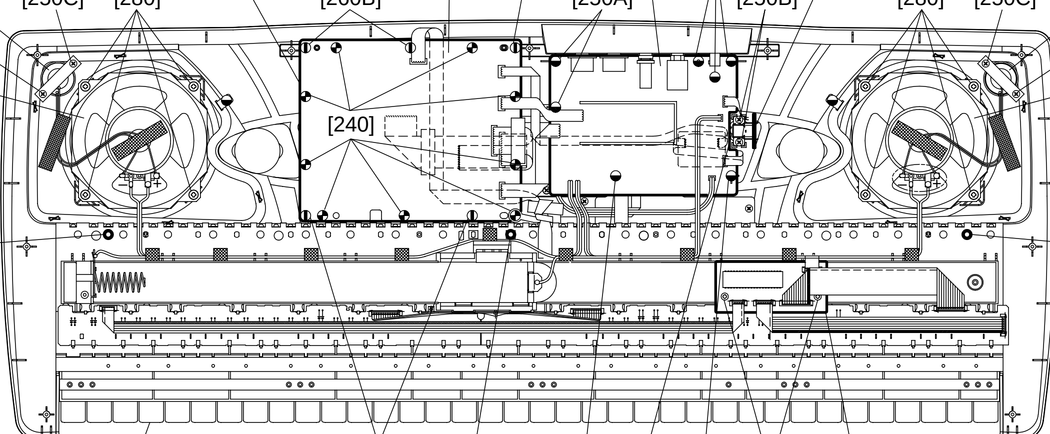
(Fig. 1)

2. Circuit Board and Units on the Panel Asseembly

After removing the lower case assembly. (See Procedure 1.)

Remove the following screws, each circuit board and can be removed. (Fig. 2)

Circuit Board and Unit	Ref. No.	Screw		QTY
DM	[260B]	Bind Head Tapping Screw-P 3.0 x 12 MFZN2Y	(EP600300)	5
	[240]	Bind Head Tapping Screw-B 3.0 x 8 MFZN2Y	(EP600250)	9
AM	[250A]	Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y	(EP600280)	7
PN(PW)	[250B]	Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y	(EP600280)	2
	[A]	Push Knob	(VQ218800)	1
MKS3	[30]	Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y	(EP600280)	2
Keyboard Assembly	[270B]	Bind Head Tapping Screw-P 3.0 x 25 MFZN2Y	(VK228100)	3



[250C]: Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y (EP600280) [280]: Bind Head Tapping Screw-P 4.0 x 8 MFZN2BL (VB931600)

(Fig. 2)

3. Speakers

3-1 Remove the lower case assembly. (See Procedure 1.)

3-2 Woofer:
Remove the four (4) screws marked [280]. The right and left speakers (woofer) can then be removed. (Fig. 2)

3-3 Tweeter:
Remove the two (2) screws marked [250C]. The right and left speakers (tweeter) can then be removed. (Fig. 2)

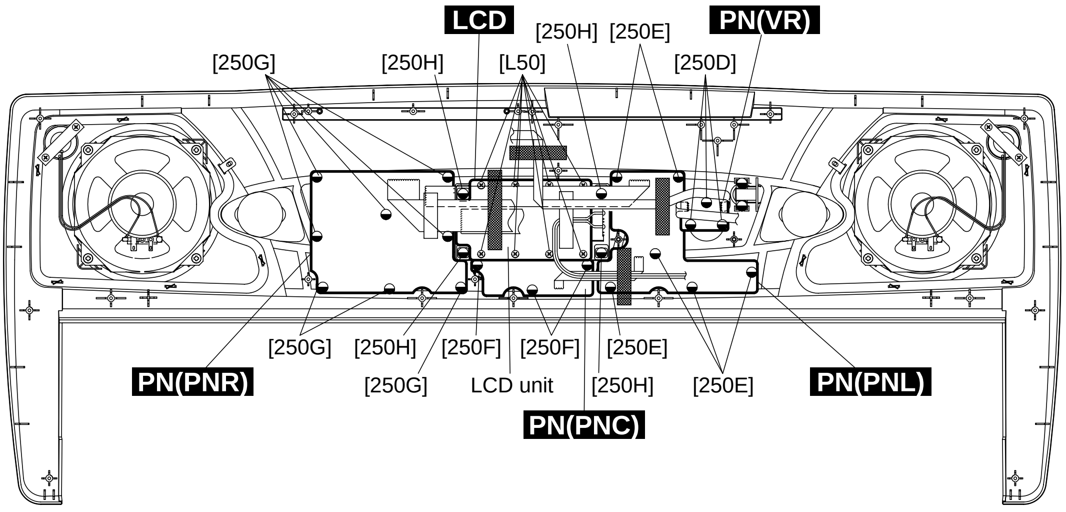
4. PN(VR), PN(PNL) Circuit Boards

4-1 Remove the lower case assembly. (See Procedure 1.)

4-2 Remove the AM circuit board. (See Procedure 2.)

4-3 PN(VR) Circuit Board:
Remove the three (3) screws marked [250D]. The PN(VR) circuit board can then be removed. (Fig. 3)

4-4 PN(PNL) Circuit Board:
Remove the six (6) screws marked [250E]. The PN(PNL) circuit board can then be removed. (Fig. 3)



[250]: Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y (EP600280) [L50]: Bind Head Tapping Screw-P 3.0 x 8 MFZN2Y (EP600280)

(Fig. 3)

5. PN(PNC), PN(PNR), LCD Circuit Boards

5-1 Remove the lower case assembly. (See Procedure 1.)

5-2 Remove the DM circuit board. (See Procedure 2.)

5-3 Remove the AM circuit board. (See Procedure 2.)

5-4 PN(PNC) Circuit Board:
Remove the three (3) screws marked [250F]. The PN(PNC) circuit board can then be removed. (Fig. 3)

5-5 PN(PNR) Circuit Board:
Remove the eight (8) screws marked [250G]. The PN(PNR) circuit board can then be removed. (Fig. 3)

5-6 LCD Circuit Board:
Remove the four (4) screws marked [250H]. The LCD unit can then be removed. (Fig. 3)
Remove the eight (8) screws marked [L50]. The LCD circuit board can then be removed. (Fig. 3)

* When re-install the LCD, place it so that the small protrusion on the LCD faces the inside on the right. (Fig. 4)

6. Disassembling the keyboard assembly

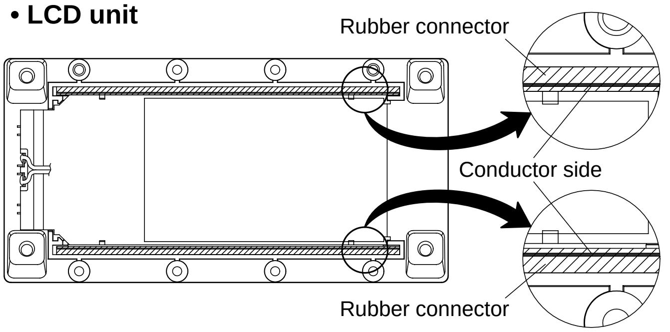
6-1 Remove the keyboard assembly. (See Procedure 2.)

6-2 Remove the two (2) screws marked [30]. The MKS3 circuit board can then be removed. (Fig. 2)

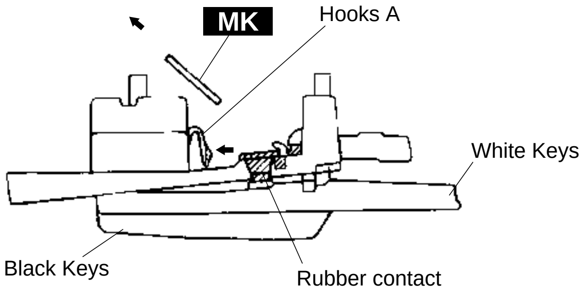
6-3 Remove the MK circuit board while pressing the fifteen (15) hooks A inward, and then remove the rubber contact. (Fig. 5)

6-4 Remove the twenty-one (21) screws marked [140], then remove the black keys from the lower notes. Afterwards, remove the white keys DFA and C' and then remove the white keys CEGB from the higher notes. At this time, lift the keys from the front and slide them towards you.The keys can then be removed from the assembly. (Fig. 6)

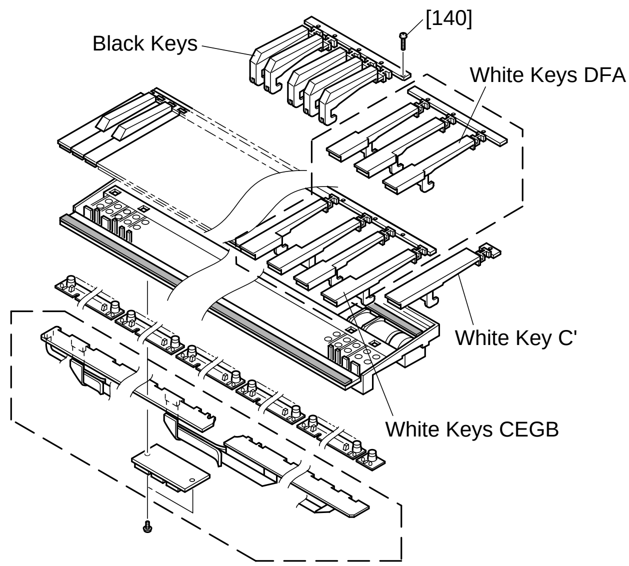
• LCD unit



(Fig. 4)



(Fig. 5)



[140]: Bind Head Tapping Screw-P 3.0 x 16 MFZN2Y (EP600310) or
[140]: Bind Head Tapping Screw-P 3.0 x 16 MFZN2BL (VB205200) or
[140]: Bind Head Tapping Screw-P 3.0 x 16 MFZN2B (VS756700)

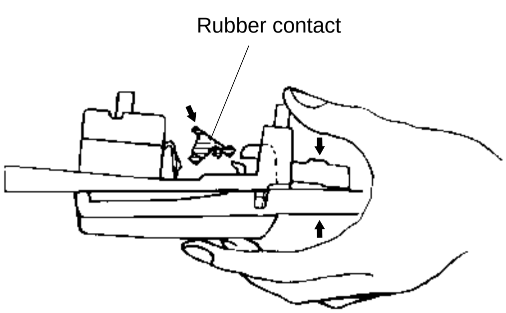
(Fig. 6)

7. Assembling the keyboard assembly

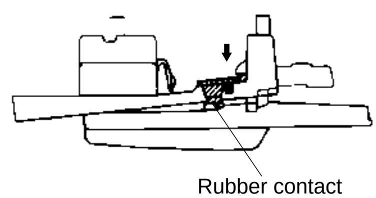
7-1 Install the white keys CEGB from the lower notes, and then install the DFA keys and C' key. Afterwards install the black keys from the higher notes, and tighten the twenty-one (21) screws marked [140]. (Fig. 6)

7-2 Install the rubber contacts in the assembly while pressing the keys as shown in Figure 9. Check that the rubber contact has been firmly placed into position in the area indicated by the arrow Figure 10.

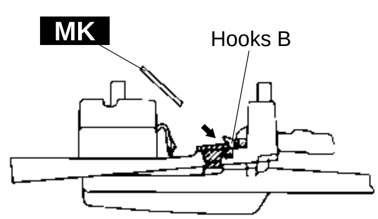
* When fitting the rubber contacts, raise both ends of the frame so that do not push the rubber contact up. Install the MK circuit board in the assembly so that the hooks B hold it as shown in Figure 11. (Fig. 7, 8, 9)



(Fig. 7)



(Fig. 8)



(Fig. 9)

■ LSI PIN DESCRIPTION

• **HG73C205AFD** (XU947C00) **SWX00B** (Tone Generator)

DM: IC101

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	ICN	I	Initial clear	85	CMA3	O	Program address bus
2	RFCLKI	I	PLL Clock	86	CMA8	O	Program address bus
3	TM2	I	PLL Control	87	CMA2	O	Program address bus
4	AVDD_PLL		Power supply	88	CRD	O	read signal
5	AVSS_PLL		Ground	89	CMA1	O	Program address bus
6	MODE0	I	SWX dual mode	90	CUB	O	high byte effective signal
7	VCC7		Power supply	91	VCC91		Power supply
8	GND8		Ground	92	GHND92		Ground
9	XIN	I	crystal oscillator	93	CS1	O	CS signal
10	XOUT	O	crystal oscillator	94	CMA0	O	Program address bus
11	MODE1	I	SWX separate mode	95	CLB	O	low byte effective signal
12	TEST0	I	TEST pin	96	CMA12	O	Program address bus
13	TESTON	I	TEST pin	97	CMA11	O	Program address bus
14	AN0-P40	I	A/D converter	98	CMA10	O	Program address bus
15	AN1-P41	I	A/D converter	99	CMA9	O	Program address bus
16	AN2-P42	I	A/D converter	100	GND100		Ground
17	AN3-P43	I	A/D converter	101	CWE	O	write signal
18	AVDD_AN		Power supply	102	CMA16	O	Program address bus
19	AVSS_AN		Ground	103	CMA15	O	Program address bus
20	TXD0	O	for MIDI or TO-HOST	104	CMA14	O	Program address bus
21	TXD1	O	for MIDI	105	CMA13	O	Program address bus
22	EXCLK	I	Crystal oscillator	106	CMD8	I/O	Program memory Data bus
23	SMD11	I/O	Wave memory data bus	107	CMD7	I/O	Program memory Data bus
24	SMD4	I/O	Wave memory data bus	108	CMD9	I/O	Program memory Data bus
25	SMD3	I/O	Wave memory data bus	109	CMD6	I/O	Program memory Data bus
26	SMD12	I/O	Wave memory data bus	110	CMD10	I/O	Program memory Data bus
27	SMD10	I/O	Wave memory data bus	111	CMD5	I/O	Program memory Data bus
28	SMD5	I/O	Wave memory data bus	112	CMD11	I/O	Program memory Data bus
29	SMD2	I/O	Wave memory data bus	113	CMD4	I/O	Program memory Data bus
30	SMD13	I/O	Wave memory data bus	114	CMD12	I/O	Program memory Data bus
31	SMD9	I/O	Wave memory data bus	115	CMD3	I/O	Program memory Data bus
32	SMD6	I/O	Wave memory data bus	116	CMD13	I/O	Program memory Data bus
33	SMD1	I/O	Wave memory data bus	117	CMD2	I/O	Program memory Data bus
34	SMD14	I/O	Wave memory data bus	118	CMD14	I/O	Program memory Data bus
35	VCC35		Power supply	119	VCC119		Power supply
36	GND36		Ground	120	GND115		Ground
37	SMD8	I/O	Wave memory data bus	121	CMD1	I/O	Program memory Data bus
38	SMD7	I/O	Wave memory data bus	122	CMD15	I/O	Program memory Data bus
39	SMD0	I/O	Wave memory data bus	123	CMD0	I/O	Program memory Data bus
40	SMD15	I/O	Wave memory data bus	124	CMA21	O	Program address bus
41	SOE	O	read signal	125	PDT15	I/O	SWX access data bus
42	SWE	O	write signal	126	PDT14	I/O	SWX access data bus
43	SRAS	O	RAS signal	127	PDT13	I/O	SWX access data bus
44	SCAS	O	CAS signal	128	PDT12	I/O	SWX access data bus
45	REFRESH	O	REFRESH signal	129	PDT11	I/O	SWX access data bus
46	CS0	O	CS signal	130	PDT10	I/O	SWX access data bus
47	SMA0	O	Memory address bus	131	PDT9	I/O	SWX access data bus
48	SMA16	O	Memory address bus	132	PDT8	I/O	SWX access data bus
49	VCC49		Power supply	133	VCC133		Power supply
50	GND50		Ground	134	GND134		Ground
51	SMA1	O	Memory address bus	135	PDT7	I/O	SWX access data bus
52	SMA15	O	Memory address bus	136	PDT6	I/O	SWX access data bus
53	SMA2	O	Memory address bus	137	PDT5	I/O	SWX access data bus
54	SMA14	O	Memory address bus	138	PDT4	I/O	SWX access data bus
55	SMA3	O	Memory address bus	139	PDT3	I/O	SWX access data bus
56	SMA13	O	Memory address bus	140	PDT2	I/O	SWX access data bus
57	SMA4	O	Memory address bus	141	PDT1	I/O	SWX access data bus
58	SMA12	O	Memory address bus	142	PDT0	I/O	SWX access data bus
59	SMA5	O	Memory address bus	143	VCA143		Power supply
60	GND60		Ground	144	GND144		Ground
61	VCC61		Power supply	145	PAD2	I	SWX access address bus
62	SMA11	O	Memory address bus	146	PAD1	I	SWX access address bus
63	SMA6	O	Memory address bus	147	PAD0	I	SWX access address bus
64	SMA10	O	Memory address bus	148	VCC148		Power supply
65	SMA7	O	Memory address bus	149	GND149		Ground
66	SMA9	O	Memory address bus	150	PCS	I	Chip select
67	SMA17	O	Memory address bus	151	PWR	I	write enable
68	SMA8	O	Memory address bus	152	PRD	I	read enable
69	SMA18	O	Memory address bus	153	RXD0	I	for Midi or TO-HOST
70	SMA19	O	Memory address bus	154	RXD1	I	for Midi or Key scan
71	SMA20	O	Memory address bus	155	SCLKI	I	EXT Clock
72	SMA21	O	Memory address bus	156	ADIN	I	A/D converter
73	SMA22	O	Memory address bus	157	ADLR	O	A/D converter LR clock
74	SMA23	O	Memory address bus	158	DO0	O	DAC
75	CMA20	O	Program address bus	159	DO1	O	DAC
76	CMA19	O	Program address bus	160	SYSCLK	O	1/2 clock
77	VCC77		Power supply	161	VCC161		Power supply
78	GND78	O	Ground	162	GND162		Ground
79	CMA18	O	Program address bus	163	WCLK	O	for DAC LR clock
80	CMA17	O	Program address bus	164	QCLK	O	1/12 clock
81	CMA5	O	Program address bus	165	BCLK	O	IIS-DAC clock
82	CMA6	O	Program address bus	166	SYI	I	Synch signal
83	CMA4	O	Program address bus	167	IRQ0	I	Interrupt request
84	CMA7	O	Program address bus	168	NMI	I	Interrupt request

● HD63B05V0F073P (XR951A00) CPU

MKS3: IC1

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	/RES	I	Reset	21	C7	I/O	Port C
2	/INT	I	Interrupt request	22	C6	I/O	Port C
3	NUM	I	Non-maskable interrupt	23	C5	I/O	Port C
4	A7	I/O	Port A	24	C4	I/O	Port C
5	A6	I/O	Port A	25	C3	I/O	Port C
6	A5	I/O	Port A	26	C2	I/O	Port C
7	A4	I/O	Port A	27	C1	I/O	Port C
8	A3	I/O	Port A	28	C0	I/O	Port C
9	A2	I/O	Port A	29	D0	I/O	Port D
10	A1	I/O	Port A	30	D1	I/O	Port D
11	A0	I/O	Port A	31	D2	I/O	Port D
12	B0	I/O	Port B	32	D3/TX	O	(Serial data output)
13	B1	I/O	Port B	33	D4/RX	I	(Serial data input)
14	B2	I/O	Port B	34	D5//CK	O	(Clock for serial operation)
15	B3	I/O	Port B	35	D6//INT2	I	(Interrupt request 2)
16	B4	I/O	Port B	36	/STBY	I	(Standby mode signal)
17	B5	I/O	Port B	37	TIMER	I	Timer
18	B6	I/O	Port B	38	XTAL	O	Clock
19	B7	I/O	Port B	39	EXTAL	I	Clock
20	VSS		Ground	40	VCC		Power supply

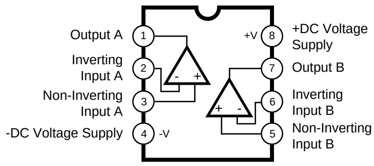
● KS0076BQ-00 (XV226A00) LCD DRIVER

LCD: IC701

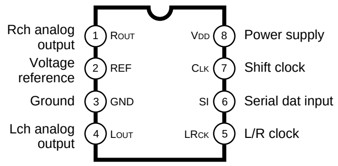
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	S22	O	Segment signal output for LCD driving	41	DB2	I/O	Data interface
2	S21	O	Segment signal output for LCD driving	42	DB3	I/O	Data interface
3	S20	O	Segment signal output for LCD driving	43	DB4	I/O	Data interface
4	S19	O	Segment signal output for LCD driving	44	DB5	I/O	Data interface
5	S18	O	Segment signal output for LCD driving	45	DB6	I/O	Data interface
6	S17	O	Segment signal output for LCD driving	46	DB7	I/O	Data interface
7	S16	O	Segment signal output for LCD driving	47	C1	O	Common signal output for LCD driving
8	S15	O	Segment signal output for LCD driving	48	C2	O	Common signal output for LCD driving
9	S14	O	Segment signal output for LCD driving	49	C3	O	Common signal output for LCD driving
10	S13	O	Segment signal output for LCD driving	50	C4	O	Common signal output for LCD driving
11	S12	O	Segment signal output for LCD driving	51	C5	O	Common signal output for LCD driving
12	S11	O	Segment signal output for LCD driving	52	C6	O	Common signal output for LCD driving
13	S10	O	Segment signal output for LCD driving	53	C7	O	Common signal output for LCD driving
14	S9	O	Segment signal output for LCD driving	54	C8	O	Common signal output for LCD driving
15	S8	O	Segment signal output for LCD driving	55	C9	O	Common signal output for LCD driving
16	S7	O	Segment signal output for LCD driving	56	C10	O	Common signal output for LCD driving
17	S6	O	Segment signal output for LCD driving	57	C11	O	Common signal output for LCD driving
18	S5	O	Segment signal output for LCD driving	58	C12	O	Common signal output for LCD driving
19	S4	O	Segment signal output for LCD driving	59	C13	O	Common signal output for LCD driving
20	S3	O	Segment signal output for LCD driving	60	C14	O	Common signal output for LCD driving
21	S2	O	Segment signal output for LCD driving	61	C15	O	Common signal output for LCD driving
22	S1	O	Segment signal output for LCD driving	62	C16	O	Common signal output for LCD driving
23	Vss		Ground	63	S40	O	Segment signal output for LCD driving
24	OSC1	I	Oscillator	64	S39	O	Segment signal output for LCD driving
25	OSC2	O	Oscillator	65	S38	O	Segment signal output for LCD driving
26	V1		Power supply	66	S37	O	Segment signal output for LCD driving
27	V2		Power supply	67	S36	O	Segment signal output for LCD driving
28	V3		Power supply	68	S35	O	Segment signal output for LCD driving
29	V4		Power supply	69	S34	O	Segment signal output for LCD driving
30	V5		Power supply	70	S33	O	Segment signal output for LCD driving
31	CLK1	O	Data latch clock	71	S32	O	Segment signal output for LCD driving
32	CLK2	O	Data shift clock	72	S31	O	Segment signal output for LCD driving
33	Vdd		Power supply (+5 V)	73	S30	O	Segment signal output for LCD driving
34	M	O	Altamated signal for LCD driver outout	74	S29	O	Segment signal output for LCD driving
35	D	O	Display data interface	75	S28	O	Segment signal output for LCD driving
36	RS	I		76	S27	O	Segment signal output for LCD driving
37	R/W	I	Read/write	77	S26	O	Segment signal output for LCD driving
38	E	I	Enable	78	S25	O	Segment signal output for LCD driving
39	DB0	I/O	Data interface	79	S24	O	Segment signal output for LCD driving
40	DB1	I/O	Data interface	80	S23	O	Segment signal output for LCD driving

■ IC BLOCK DIAGRAM

● µ**PC4570C** (XC520A00)
Dual Operational Amplifier
DM: IC502
AM: IC810,820



● µ**PD6379AGR** (XR998A00)
D/A Converter
DM: IC501

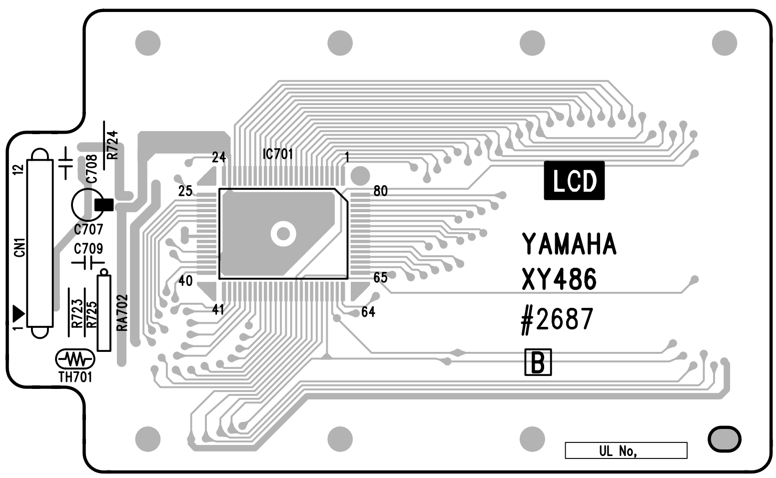


■ CIRCUIT BOARDS

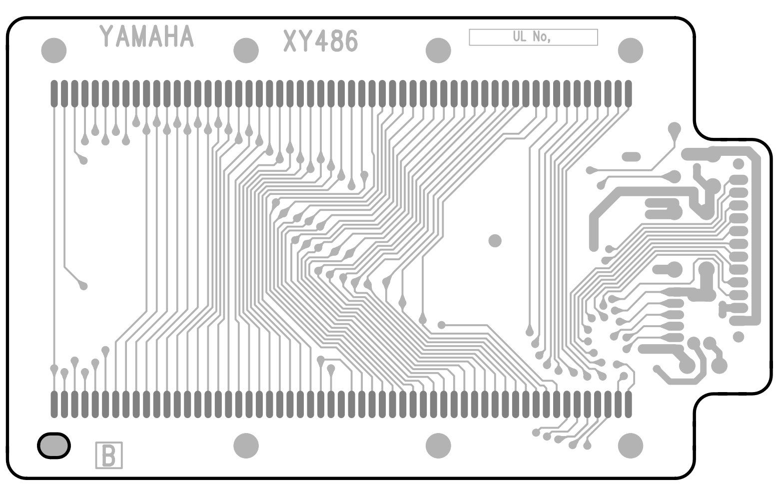
Note: See parts list for details of circuit board component parts.

● LCD Circuit Board

to DM-CN701



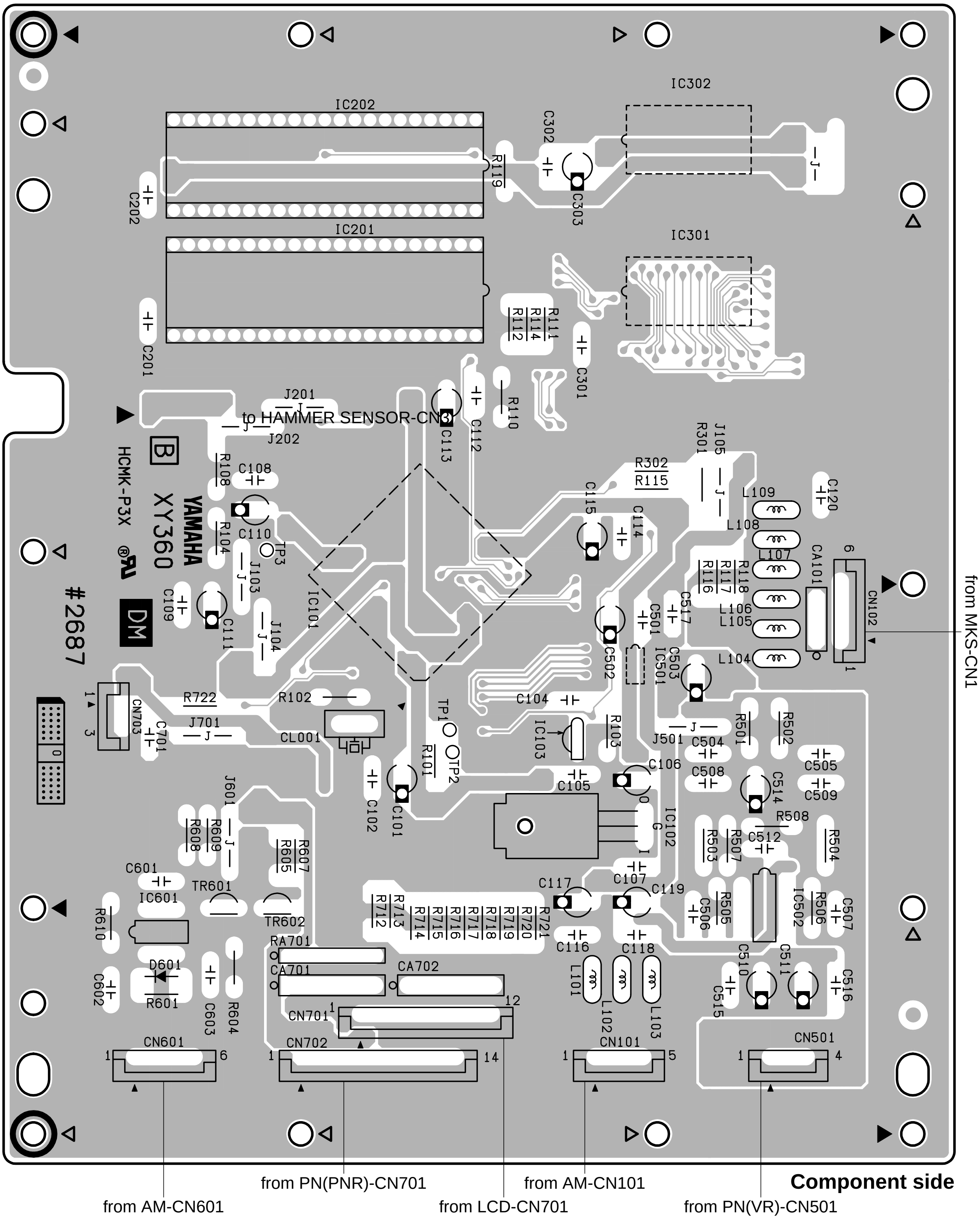
Component side



Pattern side

2NA-V539790 ⚠

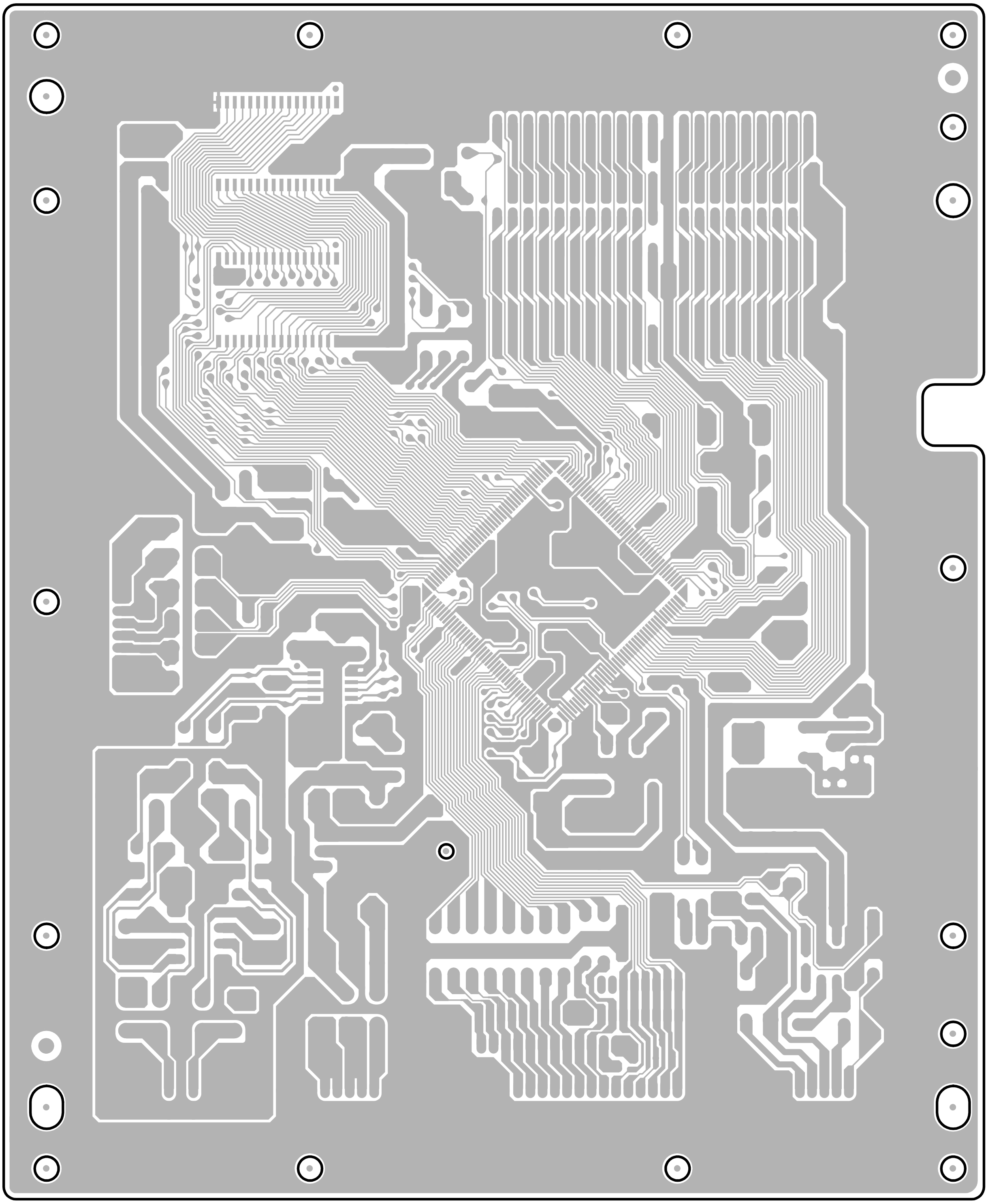
● DM Circuit Board



Component side

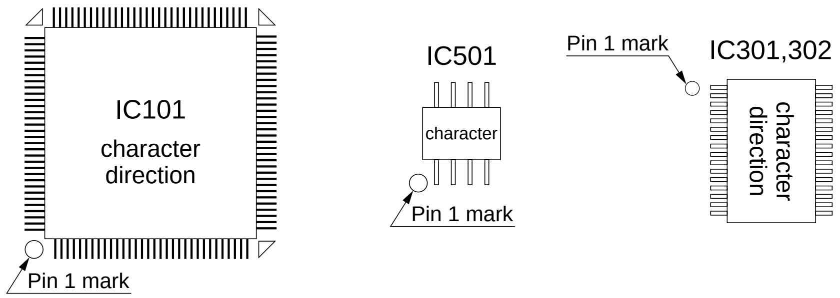
2NA-V533420 ⚠2

● DM Circuit Board



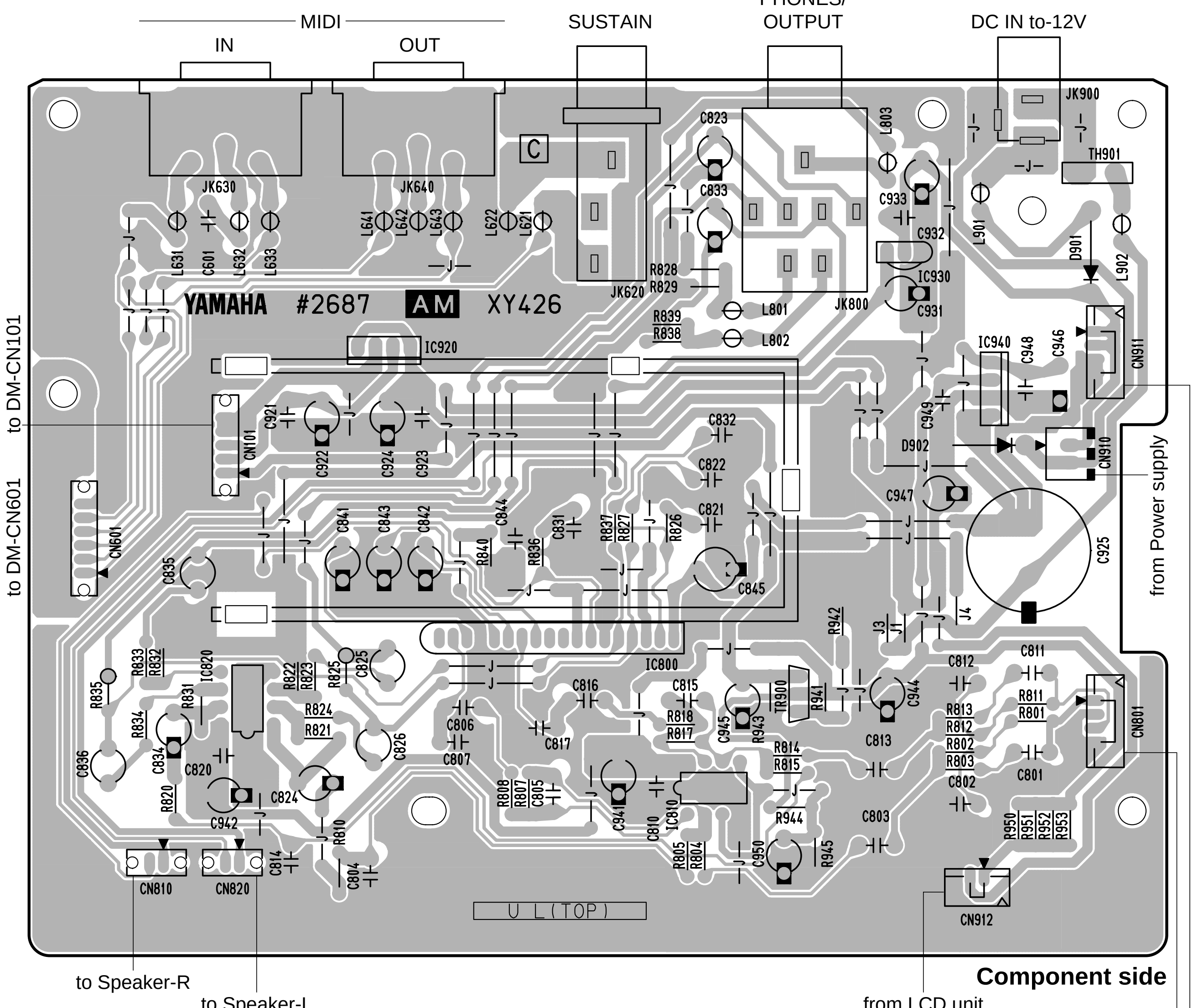
Pattern side

● IC101, IC501, IC301, 302 installation detailed drawing



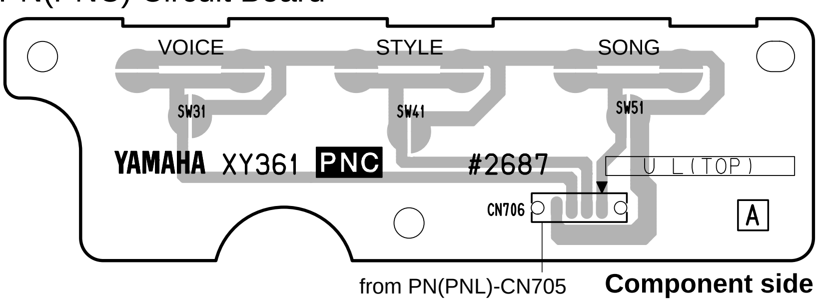
2NA-V533420 2

● AM Circuit Board



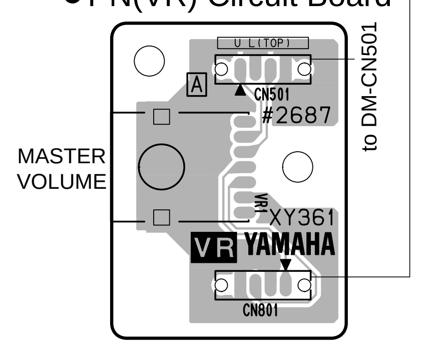
Component side

● PN(PNC) Circuit Board



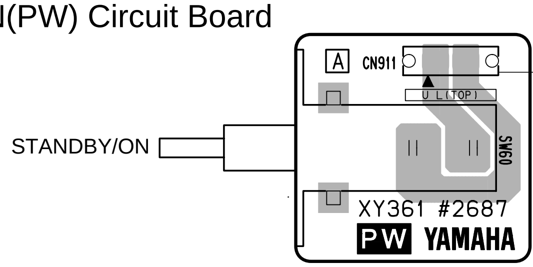
Component side

● PN(VR) Circuit Board



Component side

● PN(PW) Circuit Board

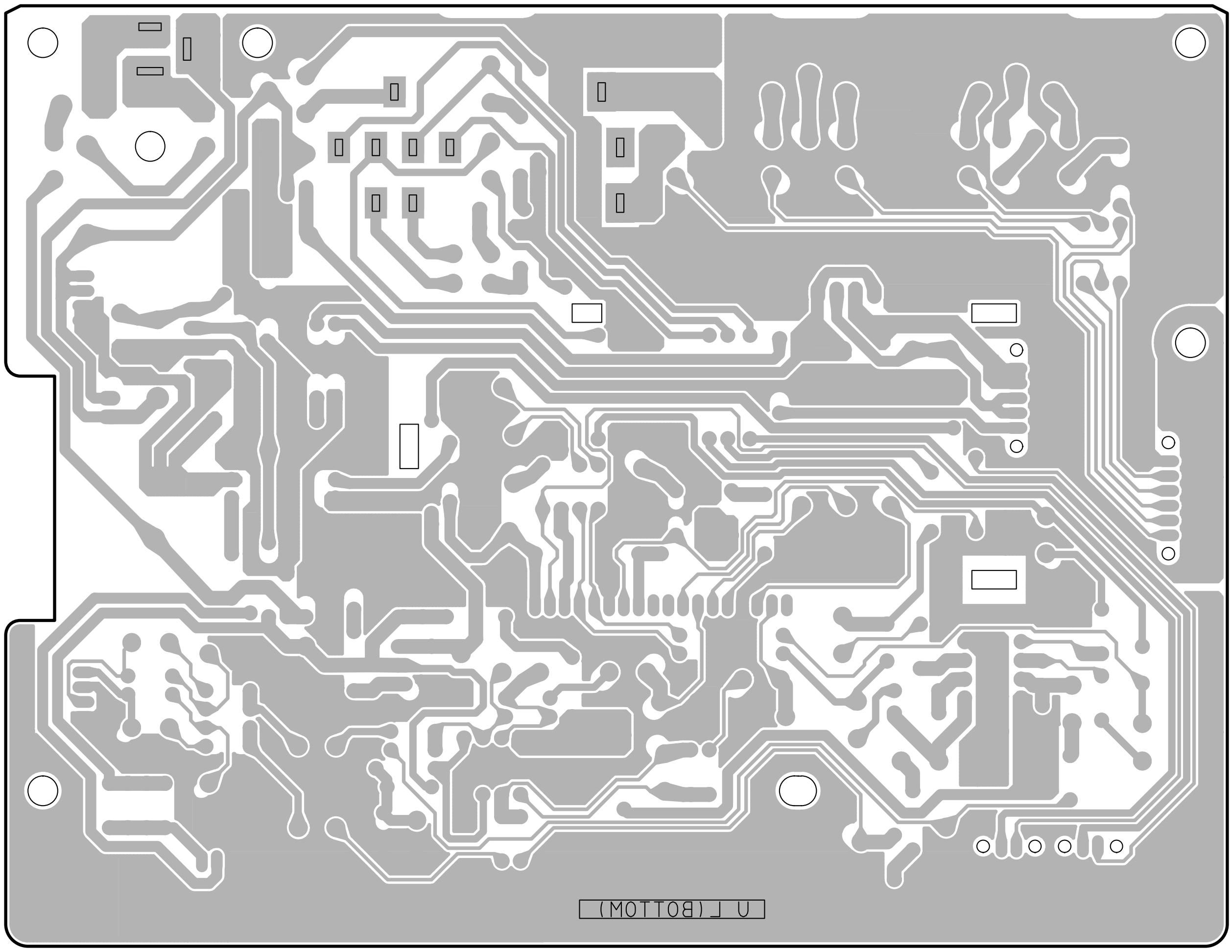


Component side

AM: 2NA-V534600 ⚠3

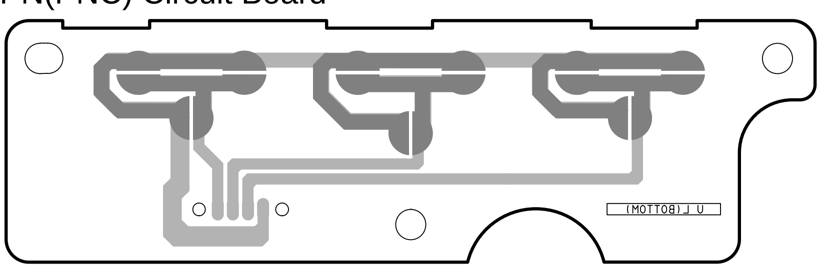
PN(PNC, PW, VR): 2NA-V534590 ⚠2

● AM Circuit Board



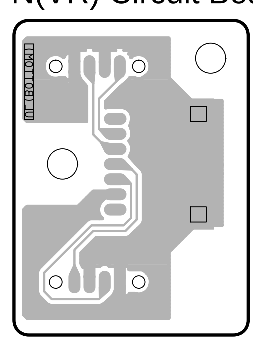
Pattern side

● PN(PNC) Circuit Board



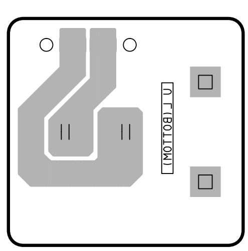
Pattern side

● PN(VR) Circuit Board



Pattern side

● PN(PW) Circuit Board

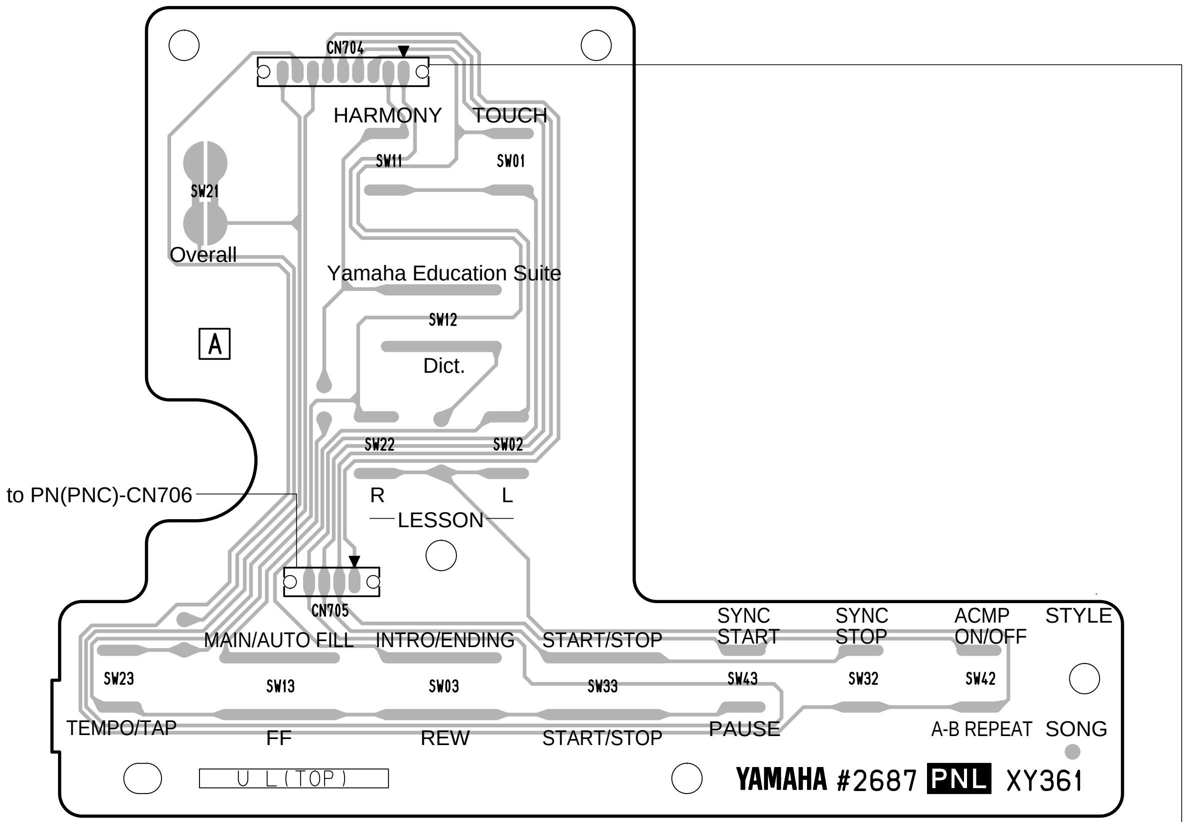


Pattern side

AM: 2NA-V534600 ⚠3

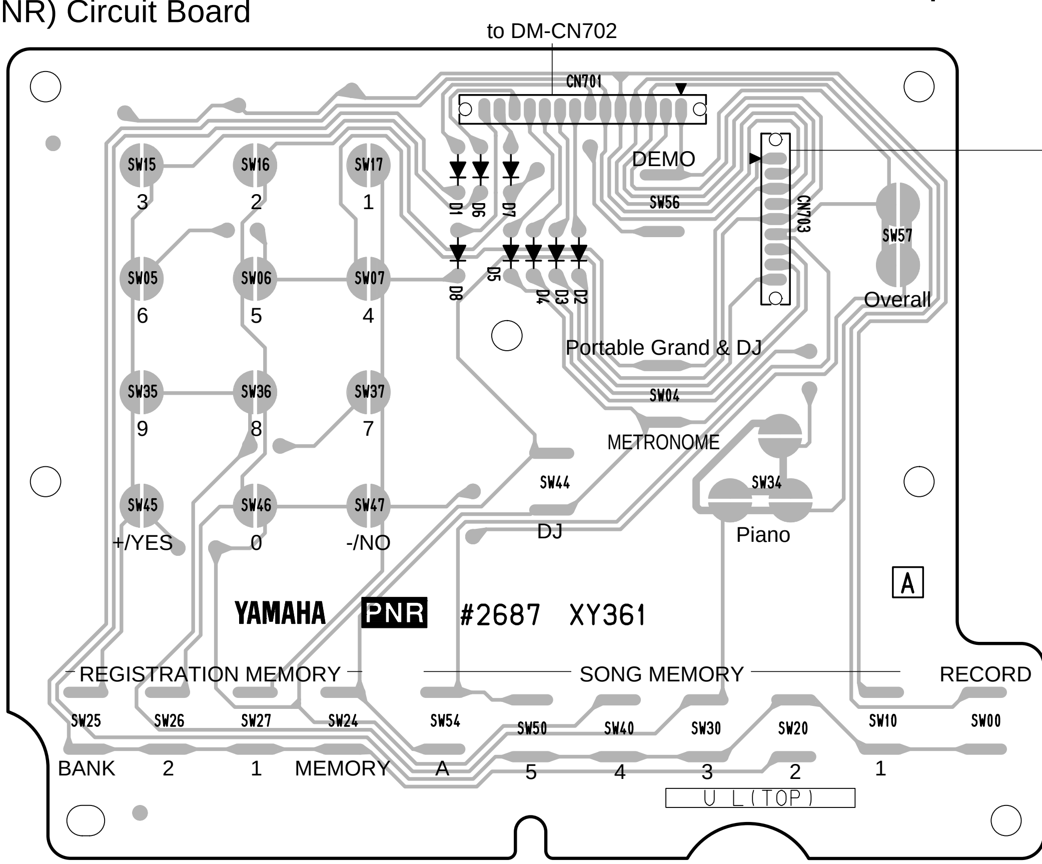
PN(PNC, PW, VR): 2NA-V534590 ⚠2

● PN(PNL) Circuit Board



Component side

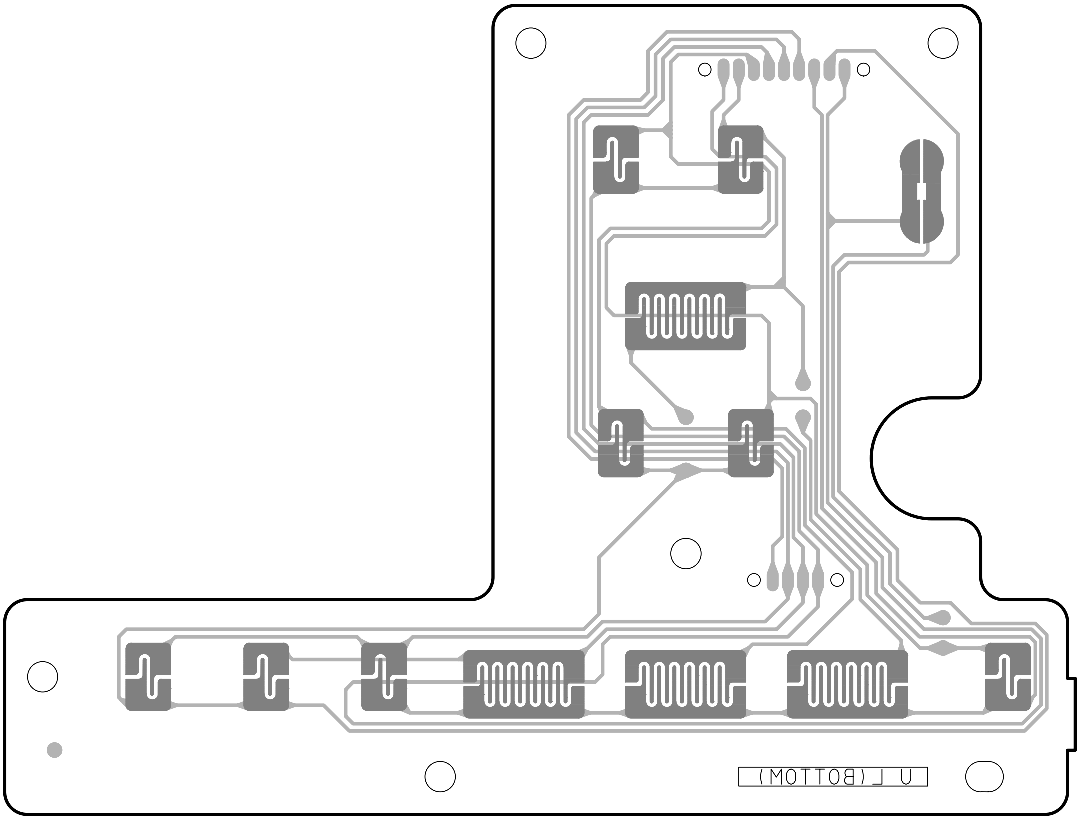
● PN(PNR) Circuit Board



Component side

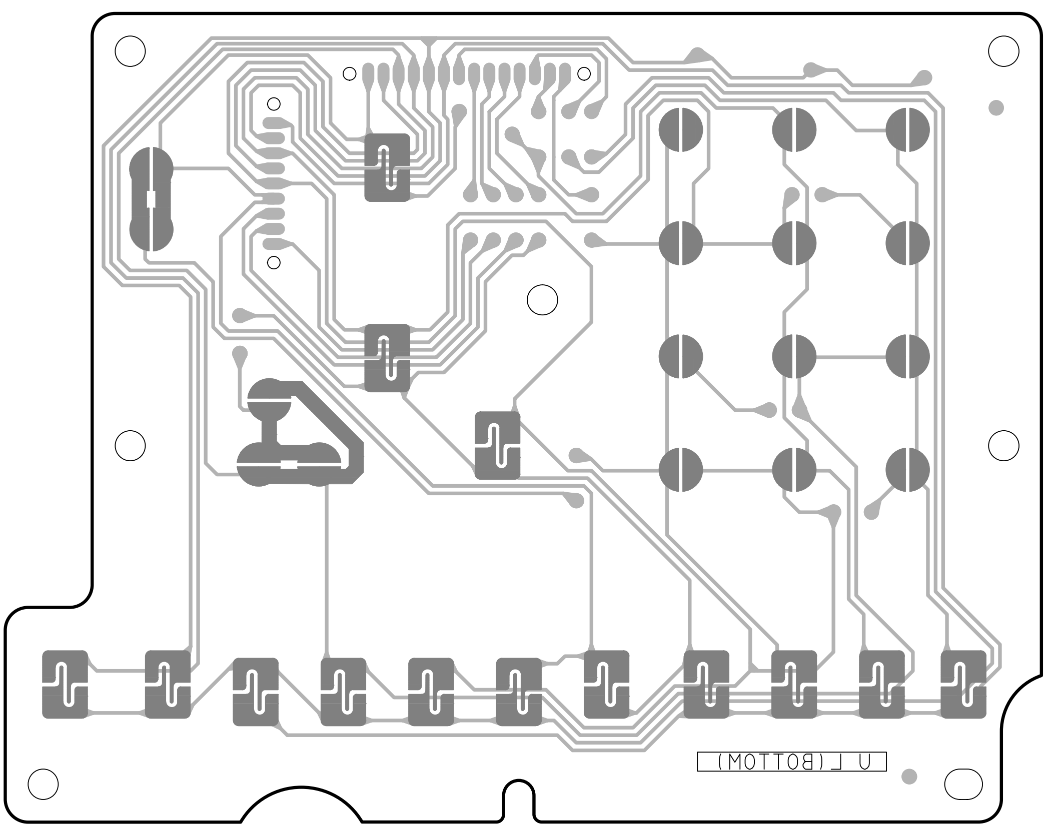
PN(PNL, PNR): 2NA-V534590⚠2

● PN(PNL) Circuit Board



Pattern side

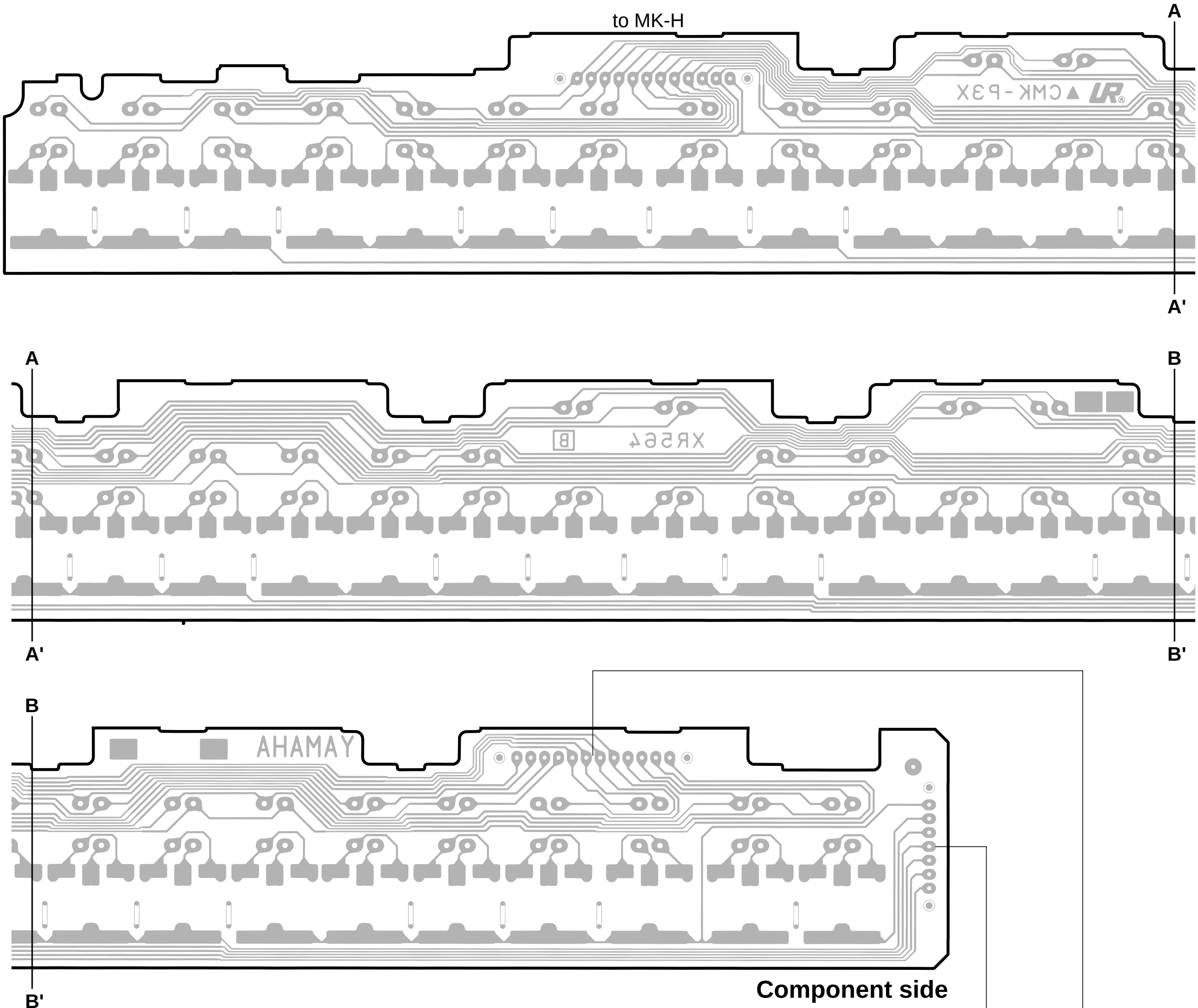
● PN(PNR) Circuit Board



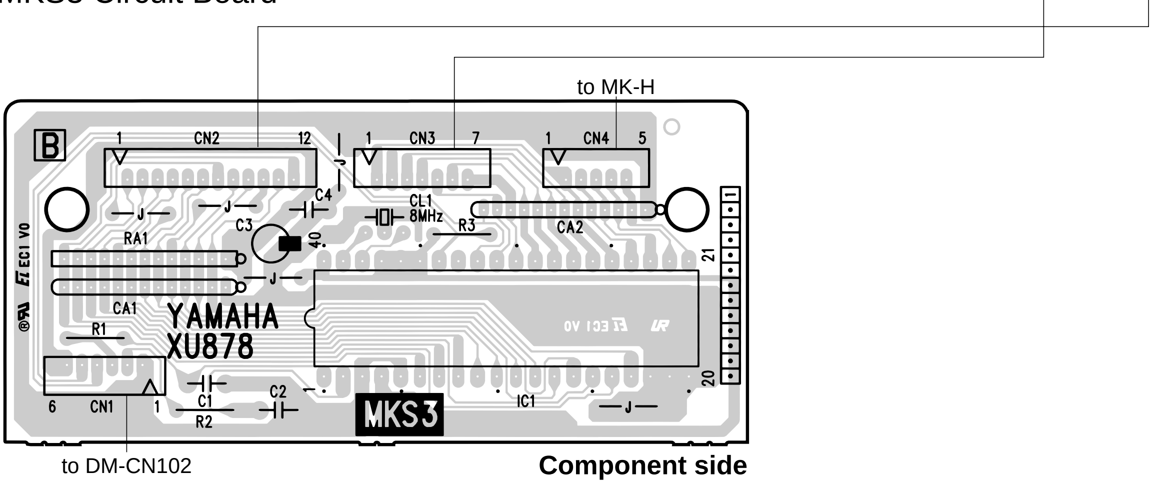
Pattern side

PN(PNL, PNR): 2NA-V534590⚠2

●MK-L Circuit Board

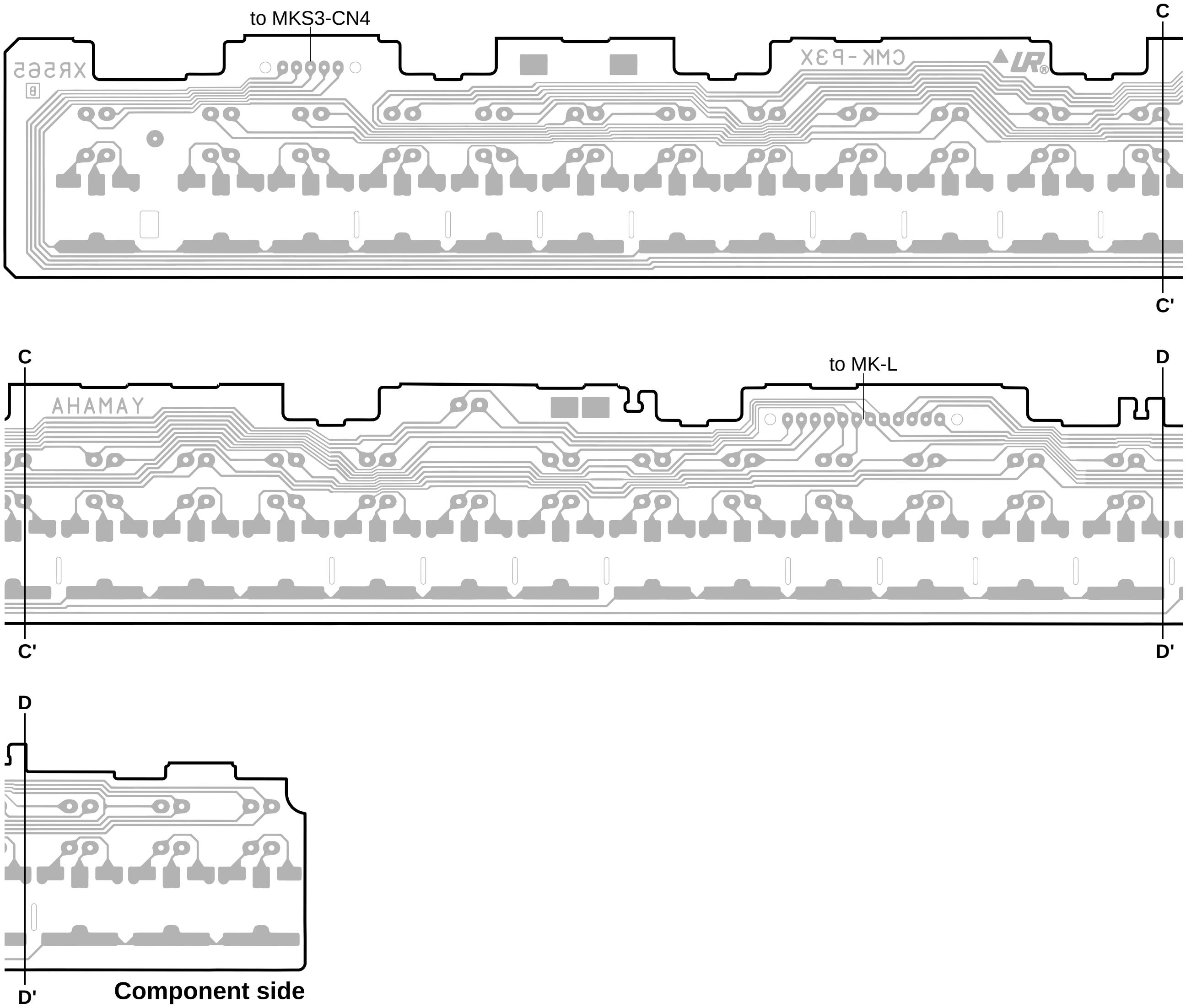


●MKS3 Circuit Board



MK-L: 2NA-VV58380
MKS3: 2NA-V240490

●MK-H Circuit Board



Component side

■ TEST PROGRAM

A. PREPARATION

1) PA-3B (AC adaptor) is used.
2) The volume is usually moved to the use position when no volume change is required.
3) Measuring instruments: frequency counter, level meter (with JIS-C filter)
   Note: Connect a stereo plug to the [PHONES] jack at 33 ohms.
4) Jigs: foot switch, MIDI cable.

B. HOW TO ENTER THE TEST PROGRAM

AUTO MODE

While pressing the C3#, F3 and G3# keys, turn the [STANDBY/ON] switch on.

MANUAL MODE

While pressing the C2#, F2 and G2# keys, turn the [STANDBY/ON] switch on.

C. PROCEEDING THROUGH THE TEST PROGRAM

AUTO MODE

When the test program is started, the test is automatically executed.
When confirmation is necessary, the test program stops operating and waits for the instruction. At this time, press the [START/STOP] button; the next test is automatically executed.

MANUAL MODE

The LCD will display “TEST” when entering the test program.
To select the program number, use the [-/NO] and [+/YES] buttons.
To execute the test, press the [START/STOP] button.
To proceed to the next test, press the [START/STOP] button.

D. TEST PROGRAM LIST

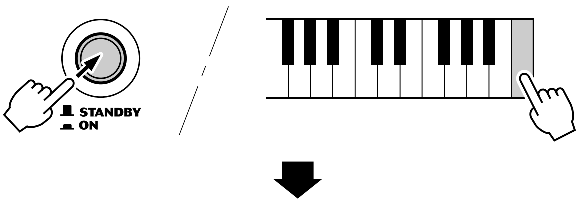
TEST NO.	LCD (initial)	Test Functions and Judgment Criteria
1	001: Version	Displays ROM version ROM (Program, Wave) versions are displayed alternately on the LCD.
2	002: Rom Chk1	Checks the ROM The test results appear on the LCD.
3	003: Ram Chk1	Checks all the RAMs that are connected to the CPU The test results appear on the LCD.
4	004: WaveRomChk1	Checks the WAVE ROMs that are connected to the CPU The test results appear on the LCD.
11	011: TG1 Chk	Outputs the sine wave by changing the channels in sequence from C1 to C4 After auto-scaling is finished, individual keys can be played. (If playing two or more keys simultaneously, the first pressed key has priority to make a sound.)
13	013: Pitch Chk	Connect the frequency counter to the [PHONES] jack. Sets PAN to Center and produces a signal at 440 +/- 1.76 Hz Check that the correct signal is produced.
14	014: Output R	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum and check the output level (1 kHz). PHONES L: less than -53.0 dBm PHONES R: -6.0 dBm +/- 2 dB
15	015: Output L	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum and check the output level (1 kHz). PHONES L: -6.0 dBm +/- 2 dB PHONES R: less than -53.0 dBm
19	019: Noise	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum. Check D/A converter noise. PHONES L/R: Less than -78.0 dBm
20	020: SW,LED Chk	Check the switches on the panel. Press the switches that are displayed on the LCD. A pre-assigned note is output when pressing the switch. The test results appear on the LCD.

TEST NO.	LCD (initial)	Test Functions and Judgment Criteria
28	028: All LCD On	Check that all LCD dots are on. The LCD becomes black.
29	029: All LCD Off	Check that all LCD dots are off. The LCD becomes white.
30	030: I/F Chk	
31	031: Pedal1 Chk	Connect the foot switch (FC-4 or FC-5) to the [SUSTAIN] jack. Check that the C3 note is output when pressing and releasing the pedal and the C4 note is output when pressing the pedal again.
37	037: Midi Chk	After connecting the [MIDI IN] jack and [MIDI OUT] jack with a MIDI cable, execute the test. Set the [HOST SELECT] switch to MIDI Check that the C4 note is output and that the test results appear on the LCD.
41	041: Rom Chk2	Checks the ROMs that are connected to the CPU. The test results appear on the LCD.
42	042: Ram Chk2	Checks the RAMs that are connected to the CPU. The test results appear on the LCD.
43	043: WaveRom Chk2	Checks the WAVE ROM. The test results appear on the LCD.
46	046: BackUp Chk2	Performs the RAM back-up check. Check that the display reads "NG," then turn off the power switch. Enter the test program and perform the RAM back-up checks, then check again. Check that the LCD displays "OK." Note: Do not turn on the power switch by normal mode while standing by, as the RAM data will be lost.
47	047: Factory Set	All the RAMs are initialized and set to the factory preset data when executing this test. The results appear on the LCD.
48	048: Test Exit	Exit from the test program after executing this test.

* NOTE: The above tests **No. 41-46**, require approximately 25 minutes to conduct.
If the time is not available to perform the tests, proceed the test No.47 by pressing several the [NEXT] button.

■ DATA INITIALIZATION

All data can be initialized and restored to the factory preset condition by turning on the power while holding the highest (rightmost) white key on the keyboard.
"CLr Backup" will appear briefly on the display.





⚠ ***CAUTION***

- *All Registration Memory and User song data, plus the other settings listed above, will be erased and/or changed when the data initialization procedure is carried out.*
- *Carrying out the data initialization procedure will usually restore normal operation if the PSR-280 freezes or begins to act erratically for any reason.*

■ MIDI IMPLEMENTATION CHART

[Portable Keyboard] Date:26-JAN-2000
Model PSR-280/PSR-282 MIDI Implementation Chart Version: 1.0

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 *1 1 - 16 *1	
Mode	Default Messages Altered	3 x **************	3 x x	
Note Number :	True voice	0 - 127 **************	0 - 127 0 - 127	
Velocity	Note ON Note OFF	o 9nH,v=1-127 o 9nH,v=0	o 9nH,v=1-127 o 9nH,v=0 or 8nH	
After Touch	Key's Ch's	x x	x x	
Pitch Bend		x	o	
Control Change	0,32 1 6,38 7 10 11 64 84 91,93,94 96,97 100,101	o x *2 x *2 o x x *2 o x *2 x x x *2	o o o o o o o o o o o	Bank Select Modulation wheel Data Entry Part Volume Pan Expression Sustain Portamento Cntrl Effect Depth RPN Inc,Dec RPN LSB,MSB
Prog Change :	True #	o 0 - 127 **************	o 0 - 127	
System Exclusive		o *3	o *3	
Common	: Song Pos. : Song Sel. : Tune	x x x	x x x	
System Real Time	: Clock : Commands	o o *4	o o *4	
Aux Mes-sages	: All Sound OFF : Reset All Cntrls : Local ON/OFF : All Notes OFF : Active Sense : Reset	x x x x o x	o(120,126,127) o(121) x o(123-125) o x	

Mode 1: OMNI ON , POLY Mode 2: OMNI ON ,MONO o: Yes
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF,MONO x: No

NOTE:

*1 By default (factory settings) the PSR-280 ordinarily functions as a 16-channel multi-timbral tone generator, and incoming data does not affect the panel voices or panel settings. However, the MIDI messages listed below do affect the panel voices, auto accompaniment, and songs.

- MIDI Master Tuning
- System exclusive messages for changing the Reverb Type, Chorus Type, and DSP Type.

*2 Messages for these control change numbers cannot be transmitted from the PSR-280 itself. However, they may be transmitted when playing the accompaniment or using the Harmony effect.

*3 Exclusive

<GM System ON> F0H, 7EH, 7FH, 09H, 01H, F7H
- This message automatically restores all default settings for the instrument, with the exception of MIDI Master Tuning.

<MIDI Master Volume> F0H, 7FH, 7FH, 04H, 01H, ll, mm, F7H
- This message allows the volume of all channels to be changed simultaneously (Universal System Exclusive).
- The values of “mm” is used for MIDI Master Tuning. (Values for “ll” are ignored.)

<MIDI Master Tuning> F0H, 43H, 1nH, 27H, 30H, 00H, 00H, mm, ll, cc, F7H
- This message simultaneously changes the tuning value of all channels.
- The values of “mm” and “ll” are used for MIDI Master Tuning.
- The default value of “mm” and “ll” are 08H and 00H, respectively. Any values can be used for “n” and “cc.”

<Bulk Dump>
- This is used for saving (recording) User data (User songs and Registration Memory).
- These messages control the clock setting for the accompaniment.

<Reverb Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 00H, mmH, llH, F7H
- mm: Reverb Type MSB
- ll: Reverb Type LSB

Refer to the Effect Map (page 86) for details.

<Chorus Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 20H, mmH, llH, F7H
- mm: Chorus Type MSB
- ll: Chorus Type LSB

Refer to the Effect Map (page 86) for details.

<DSP Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 40H, mmH, llH, F7H
- mm: DSP Type MSB
- ll: DSP Type LSB

Refer to the Effect Map (page 86) for details.

<DRY Level> F0H, 43H, 1nH, 4CH, 08H, 0mH, 11H, llH, F7H
- ll: Dry Level
- 0m: Channel Number

*4 When the accompaniment is started, an FAH message is transmitted.
When accompaniment is stopped, an FCH message is transmitted.
When the clock is set to External, both FAH (accompaniment start) and FCH (accompaniment stop) are recognized.

■ Effect map

* If the received value does not contain an effect type in the TYPE LSB, the LSB will be directed to TYPE 0.
* The numbers in parentheses in front of the Effect Type names correspond to the number indicated in the display.
* By using an external sequencer, which is capable of editing and transmitting the system exclusive messages and parameter changes, you can select the Reverb, Chorus and DSP effect types which are not accessible from the PSR-280/PSR-282 panel itself. When one of the effects is selected by the external sequencer, " - " will be shown on the display.

● REVERB

TYPE	TYPE LSB								
MSB	00	01	02	08	16	17	18	19	20
000	No Effect								
001	(1)Hall1					(2)Hall2			
002	Room					(3)Room1		(4)Room2	
003	Stage				(5)Stage1	(6)Stage2			
004	Plate				(7)Plate1	(8)Plate2			
005...127	No Effect								

● CHORUS

TYPE	TYPE LSB								
MSB	00	01	02	08	16	17	18	19	20
000...064	No Effect								
065	Chorus		Chorus2						
066	Celeste					Chorus1			
067	Flanger			Flanger1		Flanger2			
068...127	No Effect								

● DSP

TYPE	TYPE LSB								
MSB	00	01	02	08	16	17	18	19	20
000	No Effect								
001	(1)Hall1					(2)Hall2			
002	Room					(3)Room1		(4)Room2	
003	Stage				(5)Stage1	(6)Stage2			
004	Plate				(7)Plate1	(8)Plate2			
005	Delay L,C,R				(26)Delay L,C,R				
006	(27)Delay L,R								
007	(28)Echo								
008	(29)Cross Delay								
009	(9)Early Reflection1	(10)Early Reflection2							
010	(11)Gate Reverb								
011	(12)Reverse Gate								
012...019	No Effect								
020	(30)Karaoke								
021...064	No Effect								
065	Chorus		(14)Chorus2						
066	Celeste					(13)Chorus1			
067	Flanger			(15)Flanger1		(16)Flanger2			
068	Symphonic				(17)Symphonic				
069	Rotary Speaker				(19)Rotary Speaker1				
070	Tremolo				(21)Tremolo1				
071	Auto Pan				(24)Auto Pan		(20)Rotary Speaker2	(22)Tremolo2	(23)Guitar Tremolo
072	(18)Phaser								
073	Distortion								
074	(33)Overdrive								
075	(34)Amp Simulation				(31)Distortion Hard	(32)Distortion Soft			
076	(36)3Band EQ					(35)EQ Telephone			
077	(37)2Band EQ								
078	Auto Wah				(25)Auto Wah				
079...127	No Effect								

PORTATONE

PSR-280/PSR-282

PARTS LIST

CONTENTS

Notes: DESTINATION ABBREVIATIONS

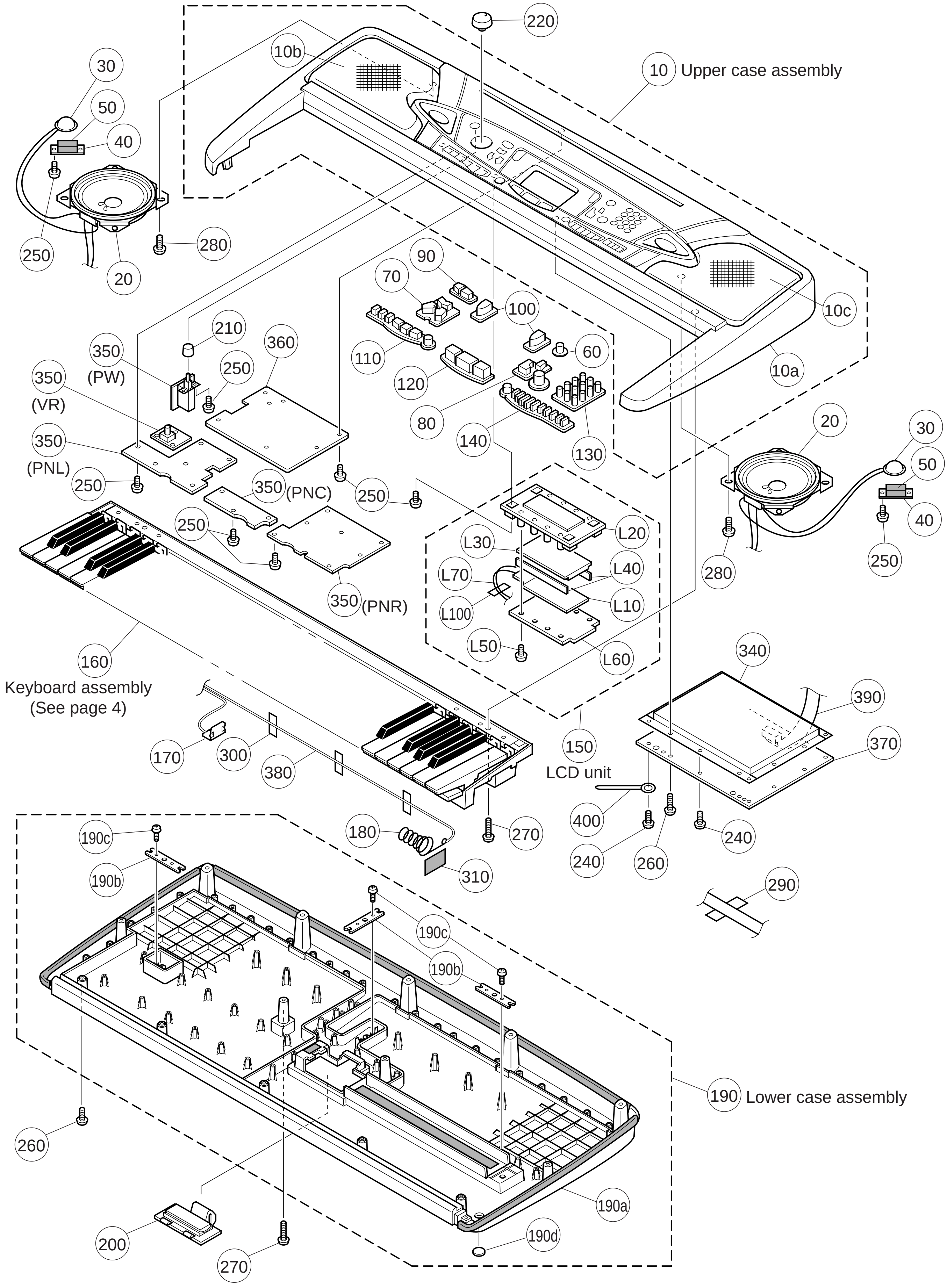
A:	Australian model	M:	South African model
B:	British model	O:	Chinese model
C:	Canadian model	Q:	South-east Asia model
D:	German model	T:	Taiwan model
E:	European model	U:	U.S.A. model
F:	French model	V:	General export model (110 V)
H:	North European model	W:	General export model (220 V)
I :	Indonesian model	N,X:	General export model
J :	Japanese model	Y:	Export model

WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

- The numbers in " QTY " show quantities for each unit.
- The parts with " **- -** " in " **PART NO.** " are not available as spare parts.
- The mark " } " in the remarks column indicates that these parts are interchangeable.
- The second letter of the shaded ( ) part number is O, not zero.
- The second letter of the shaded ( ) part number is I, not one.

OVERALL ASSEMBLY

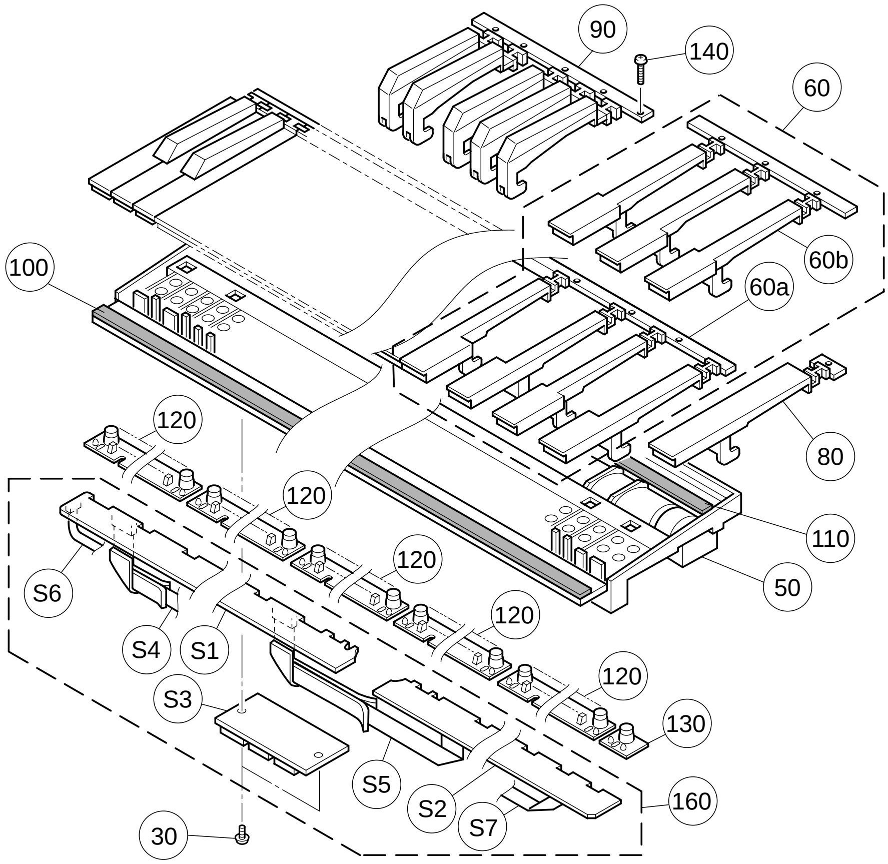


	REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
			OVERALL ASSEMBLY		PSR-280/PSR-282		
		--	Overall Assembly		PSR280 J,U,C,W,O (V524070)		
		--	Overall Assembly		PSR282 U,C (V549940)		
*	10	**V5253000**	Upper Case Assembly		PSR280 J,U,C,W,O		
*	10	**V5502600**	Upper Case Assembly		PSR282 U,C		
	10a	--	Upper Case		PSR280 J,U,X,W,O (V525260)		
	10a	--	Upper Case		PSR282 U,C (V550350)		
*	10b	**V5201700**	Speaker Grille	LEFT			
*	10c	**V5201800**	Speaker Grille	RIGHT			
	20	**XV806A00**	Speaker	12.0cm 4ohm 3W	WOOFER	2	07
	30	**XV947A00**	Speaker	3.0cm	TWEETER	2	03
	40	--	Stopper		(V364540)	2	
	50	--	Sponge		(V364550)	2	
*	60	**V5145600**	PN Rubber	A3 YE	DEMO		
*	70	**V5145800**	PN Rubber	C GY/OR	Yamaha Education Suite/		
					LESSON		
*	80	**V5146100**	PN Rubber	F OR/BL	Portable Grand & DJ		
*	90	**V5146400**	PN Rubber	I BL/GY	TOUCH,HARMONY		
*	100	**V5146500**	PN Rubber	J GY	LCD Select L,R	2	
*	110	**V5146600**	PN Rubber	K GY/RE/BE	STYLE/SONG,PAUSE,START/		
					STOP,REW,FF,TEMPO/TAP		
*	120	**V5146700**	PN Rubber	L GY	SONG,STYLE,VOICE		
*	130	**V5150100**	PN Rubber	M GY	0-9 Keys,-/NO,+/YES		
*	140	**V5146900**	PN Rubber	N RE/GY/BL	RECORD,SONG MEMORY,		
					REGISTRATION MEMORY		
	150	--	LCD Unit	F	(V541500)		
	160	**V2386100**	Keyboard Assembly	16M C61 MKS3			
	170	**VI663700**	Terminal	+			
	180	**VI865800**	Spring Terminal	-			
	190	**V3337900**	Lower Case Assembly				11
	190a	--	Lower Case		(V311450)		
	190b	**VI104400**	Holder, Leg	CH		3	
	190c	**EP600280**	Bind Head Tapping Screw-P	3.0X8 MFZN2Y		6	01
	190d	**CB043750**	Foot	BL T1.6		5	01
	200	**VM754600**	Battery Cover Assembly				
	210	**VQ218800**	Push Knob		STANDBY/ON		03
	220	**VU432400**	Volume Knob		MASTER VOLUME MIN/MAX		01
	240	**EP600250**	Bind Head Tapping Screw-B	3.0X8 MFZN2Y		9	01
	250	**EP600280**	Bind Head Tapping Screw-P	3.0X8 MFZN2Y		39	01
	260	**EP600300**	Bind Head Tapping Screw-P	3.0X12 MFZN2Y		20	01
	270	**VK228100**	Bind Head Tapping Screw-P	3.0X25 MFZN2Y		5	01
	280	**VB931600**	Bind Head Tapping Screw-P	4.0X8 MFZN2BL		8	01
	290	**VN195400**	Adhesive Tape	12X70			03
	300	**VA126100**	Adhesive Tape	12X50		17	03
	310	**VJ861500**	Vibration-proof Tape	18X25		2	03
	340	--	Shield Box	LOWER	(V527510)		
*	350	**V5345900**	Circuit Board	PN			
*	360	**V5346000**	Circuit board	AM			
*	370	**V5334200**	Circuit Board	DM			
	380	--	Connector Assembly	AM-POWER 2P	(V539130)		
	390	--	Connector Assembly	DM-MKS 6P	(V616910)		
	400	**CB817510**	Cord Holder	S-14B			03
		--	LCD Unit	F	(V541500)		
*	L10	**V5265000**	Back Light Assembly	B			
*	L20	**V5339100**	LCD Panel	TYPE-B			
*	L30	**V5263900**	LCD	RCD2143T			
	L40	**V3755900**	Rubber Connector	SS-105L	}	2	01
*	L40	**V5415400**	Rubber Connector	PO-SS-105L		2	
	L50	**EP600280**	Bind Head Tapping Screw-P	3.0X8 MFZN2Y		8	01
*	L60	**V5478400**	Circuit Board	LCD			
	L70	--	Connector Assembly	AM-LCD 2P	(V539120)		
	L100	**VA126100**	Adhesive Tape	12X50			03
			ACSSESSORIES				
		V3385300	Music Rest				06
		VT368600	AC Adapter	PA-3B JP	PSR-280 J		09
		VY944300	AC Adapter	PA-32 CH	PSR-280 O		10
*		**V5242400**	Japanese Guide		PSR-280 J		
*		**V5303700**	Chinese Guide		PSR-280 O		

*: New Parts

RANK: Japan only

■ KEYBOARD ASSEMBLY



REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	V2386100	KEYBOARD ASSEMBLY	16M C61 MKS3		PSR-280/PSR-282		
30	EP600280	Bind Head Tapping Screw-P	3.0X8 MFZN2Y			2	01
30	EP630220	Bind Head Tapping Screw-P	3.0X8 MFZN2BL			2	01
50	- -	Frame	C61		(VS15380)		
50	VU328600	Frame	C61 16M				10
60	VH1809C0	White Key	16L CEGBDEA			5	05
60a	- -	White Key	16L CEGB		(VH18090)	5	
60b	- -	White Key	16L DFA		(VH18910)	5	
80	VH181100	White Key	16L C'				01
90	VH181200	Black Key	16L #			5	03
100	VH181300	Felt					03
110	VH181400	Rubber Sheet					01
120	VU328400	Rubber Contact	16M OCT 2M 12KEYS			5	06
130	VU328500	Rubber Contact	16M C' 2M 1KEY				05
140	EP600310	Bind Head Tapping Screw-P	3.0X16 MFZN2Y			21	01
140	VB205200	Bind Head Tapping Screw-P	3.0X16 MFZN2BL			21	01
140	VS756700	Bind Head Tapping Screw-P	3.0X16 MFZN2B			21	01
150	TX920280	Grease	G-31KA				10
160	- -	Circuit Board Assembly	KBD SW MKS3		(V240470)		
	- -	Circuit Board Assembly	KBD SW MKS3		(V240470)		
S1	VV583800	Circuit Board	MK-L				09
S2	VV583900	Circuit Board	MK-S				09
S3	V2404900	Circuit Board	KBS3				10
S4	VV583100	Cable	MK-A 12P				03
S5	VV583600	Cable	MK-B 12P				03
S6	VV583500	Cable	MK-C 7P				03
S7	VV583700	Cable	MK-D 5P				03
S8	- -	Sponge	A 16M		(VV61890)	2	
S9	- -	Sponge	B 16M		(VV61900)	2	
S10	- -	Adhesive Tape	C 12		(VV61910)		
S11	- -	Adhesive Tape	D 12		(VV61920)	3	

*: New Parts

RANK: Japan only

■ ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			ELECTRICAL PARTS			PSR-280/PSR-282		
*		**V5346000**	Circuit Board	AM		(XY426B0)		
*		**V5334200**	Circuit Board	DM		(XY360B0)		
*		**V5478400**	Circuit Board	LCD		(XY486B0)		
		VV583900	Circuit Board	MK-H		(VV70120)(XR565B0)		09
		VV583800	Circuit Board	MK-L		(VV70110)(XR564B0)		09
		V2404900	Circuit Board	MKS3		(XU878B0)		10
*		**V5345900**	Circuit Board	PN		(XY361A0)		
*		**V5346000**	Circuit Board	AM		(XY426B0)		
		EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			3	01
		VA078900	Jumper Wire	0.55				
	C0601	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0801	**UA354680**	Mylar Capacitor	0.068 50V J				01
	C0802	**VR168700**	Monolithic Mylar Capacitor	ECQ-V1H224JL3				01
	C0803	**VR169000**	Monolithic Mylar Capacitor	ECQ-V1H334JL3				01
	C0804	**VR168900**	Monolithic Mylar Capacitor	ECQ-V1H274JL3				01
	C0805	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
	C0806	**VT757800**	Monolithic Ceramic Cap.	1.000 25V Z				01
	C0807	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
	C0810	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0811	**UA354680**	Mylar Capacitor	0.068 50V J				01
	C0812	**VR168700**	Monolithic Mylar Capacitor	ECQ-V1H224JL3				01
	C0813	**VR169000**	Monolithic Mylar Capacitor	ECQ-V1H334JL3				01
	C0814	**VR168900**	Monolithic Mylar Capacitor	ECQ-V1H274JL3				01
	C0815	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
	C0816	**VT757800**	Monolithic Ceramic Cap.	1.000 25V Z				01
	C0817	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
	C0820	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0821	**UA654470**	Mylar Capacitor	0.047 50V J				01
	C0822	**UA654470**	Mylar Capacitor	0.047 50V J				01
	C0823	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	C0824	**UR846470**	Electrolytic Cap.	4.7 25.0V				01
	C0825	**UN846470**	Electrolytic Cap.-BP	4.7 25.0V				01
	C0826	**UN846470**	Electrolytic Cap.-BP	4.7 25.0V				01
	C0831	**UA654470**	Mylar Capacitor	0.047 50V J				01
	C0832	**UA654470**	Mylar Capacitor	0.047 50V J				01
	C0833	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	C0834	**UR846470**	Electrolytic Cap.	4.7 25.0V				01
	C0835	**UN846470**	Electrolytic Cap.-BP	4.7 25.0V				01
	C0836	**UN846470**	Electrolytic Cap.-BP	4.7 25.0V				01
	C0841	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0842	**UR827330**	Electrolytic Cap.	33.00 10.0V				01
	C0843	**UR865470**	Electrolytic Cap.	0.47 50.0V				01
	C0844	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0845	**UR848100**	Electrolytic Cap.	100.00 25.0V				01
	C0921	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0922	**UR867100**	Electrolytic Cap.	10.00 50.0V				01
	C0923	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0924	**UR867100**	Electrolytic Cap.	10.00 50.0V				01
	C0925	**UR749470**	Electrolytic Cap.	4700 25.0V				05
	C0931	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0932	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0933	**UR867100**	Electrolytic Cap.	10.00 50.0V				01
	C0941	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	C0942	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	C0944	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	C0945	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	-0947	**UR867100**	Electrolytic Cap.	10.00 50.0V				01
	C0948	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0949	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0950	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	CN101	**VI878300**	Cable Holder	51048 5P TE				01
	CN601	**VI878400**	Cable Holder	51048 6P TE				01
	CN801	**VK024800**	Wire Trap	52147 4P TE				01
	CN810	**VI878000**	Cable Holder	51048 2P TE				01
	CN820	**VI878000**	Cable Holder	51048 2P TE				01
	CN910	**LB918020**	Base Post Connector	XH 2P TE				01
	CN911	**VK024800**	Wire Trap	52147 4P TE				01
	CN912	**VK024600**	Wire Trap	52147 2P TE				01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
D0901	**VL723600**	Diode	20E1-FC4				01
D0902	**VL723600**	Diode	20E1-FC4				01
HS001	**- -**	Heat Sink			(V243900)		
IC800	**XQ619A00**	IC	LA4705NA		POWER AMP 17W		05
IC810	**XC520A00**	IC	UPC4570C		OP AMP		01
IC820	**XC520A00**	IC	UPC4570C		OP AMP		01
IC920	**XL450A00**	IC	PQ05RA1		REGULATOR +5V		03
IC930	**XT625A00**	IC	S-81250SGY-Z		REGULATOR +5V		02
IC940	**XL450A00**	IC	PQ05RA1		REGULATOR +5V		03
JK620	**VB312600**	Phone Jack	YKB21-5012 BL		SUSTAIN		02
JK630	**VJ107200**	DIN Connector	5P YKF51-5050		MIDI IN		01
JK640	**VJ107200**	DIN Connector	5P YKF51-5050		MIDI OUT		01
JK800	**LB101870**	Phone Jack	YKB21-5006		PHONES/OUTPUT		03
JK900	**VC664500**	Connector	HEC2305		DC IN 12-12V		01
J0001	**VA078900**	Jumper Wire	0.55				
J0003	**VA078900**	Jumper Wire	0.55				
J0004	**VA078900**	Jumper Wire	0.55				
L0621	**VB835000**	Coil	FL5R200QNT 20uH				01
L0622	**VB835000**	Coil	FL5R200QNT 20uH				01
L0621	**VF968800**	Coil	SBT-0260TF 60uH				01
L0622	**VF968800**	Coil	SBT-0260TF 60uH				01
L0631	**VB835000**	Coil	FL5R200QNT 20uH				01
-0633	**VB835000**	Coil	FL5R200QNT 20uH				01
L0631	**VF968800**	Coil	SBT-0260TF 60uH				01
-0633	**VF968800**	Coil	SBT-0260TF 60uH				01
L0641	**VB835000**	Coil	FL5R200QNT 20uH				01
-0643	**VB835000**	Coil	FL5R200QNT 20uH				01
L0641	**VF968800**	Coil	SBT-0260TF 60uH				01
-0643	**VF968800**	Coil	SBT-0260TF 60uH				01
L0801	**VB835000**	Coil	FL5R200QNT 20uH				01
-0803	**VB835000**	Coil	FL5R200QNT 20uH				01
L0801	**VF968800**	Coil	SBT-0260TF 60uH				01
-0803	**VF968800**	Coil	SBT-0260TF 60uH				01
L0901	**VB835000**	Coil	FL5R200QNT 20uH				01
L0902	**VB835000**	Coil	FL5R200QNT 20uH				01
L0901	**VF968800**	Coil	SBT-0260TF 60uH				01
L0902	**VF968800**	Coil	SBT-0260TF 60uH				01
R0801	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0802	**HF756680**	Carbon Resistor	6.8K 1/4 J				01
R0803	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0804	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0805	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0807	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0808	**HF755220**	Carbon Resistor	220.0 1/4 J				01
R0810	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0811	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0812	**HF756680**	Carbon Resistor	6.8K 1/4 J				01
R0813	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0814	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0815	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0817	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0818	**HF755220**	Carbon Resistor	220.0 1/4 J				01
R0820	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0821	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0822	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0823	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0824	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
* R0825	**VU317000**	Metal Oxide Film Resistor	0.1 1W J				
R0826	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0827	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0828	**HF755100**	Carbon Resistor	100.0 1/4 J				01
R0829	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0831	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0832	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0833	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0834	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
* R0835	**VU317000**	Metal Oxide Film Resistor	0.1 1W J				
R0836	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0837	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0838	**HF755100**	Carbon Resistor	100.0 1/4 J				01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R0839	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0840	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0941	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
R0942	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0943	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
R0944	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0945	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
R0950	**HF755120**	Carbon Resistor	120.0 1/4 J				01
-0953	**HF755120**	Carbon Resistor	120.0 1/4 J				01
TH901	**VU847300**	Protector Switch	RUE185 1.85A 30V				03
TR900	**IC174070**	Transistor	2SC1740S R,S				01
WH100	--	Connector Assembly	DM-AM1 5P		(V538990)		
WH200	--	Connector Assembly	DM-AM2 6P		(V539000)		
WH300	--	Connector Assembly	AM-SP-R 2P		(V539140)		
WH400	--	Connector Assembly	AM-SP-L 2P		(V560490)		
*	**V5334200**	Circuit Board	DM		(XY360B0)		
	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				01
	VA078900	Jumper Wire	0.55				
C0101	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0102	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0104	**FG652100**	Ceramic Capacitor-SL	100P 50V J				01
C0105	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0106	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0107	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
-0109	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0110	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0111	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0112	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0113	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0114	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0115	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0116	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0117	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0118	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0119	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0120	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0201	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0202	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0301	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0302	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0303	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0501	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0502	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
C0503	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
C0504	**FG613220**	Ceramic Capacitor-B	2200P 50V K				01
C0505	**FG613220**	Ceramic Capacitor-B	2200P 50V K				01
C0506	**FG612220**	Ceramic Capacitor-B	220P 50V K				01
C0507	**FG612220**	Ceramic Capacitor-B	220P 50V K				01
C0508	**FG612330**	Ceramic Capacitor-B	330P 50V K				01
C0509	**FG612330**	Ceramic Capacitor-B	330P 50V K				01
C0510	**UR866470**	Electrolytic Cap.	4.7 50.0V				01
C0511	**UR866470**	Electrolytic Cap.	4.7 50.0V				01
C0512	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0514	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
C0515	**FG652100**	Ceramic Capacitor-SL	100P 50V J				01
C0516	**FG652100**	Ceramic Capacitor-SL	100P 50V J				01
C0517	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0601	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
C0602	**FG613100**	Ceramic Capacitor-B	1000P 50V K				01
C0603	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
CA101	**VK994900**	Ceramic Capacitor Array	100P 50V M				01
CA701	**VH484100**	Ceramic Capacitor Array	100P 50V M				02
CA702	**VH484100**	Ceramic Capacitor Array	100P 50V M				02
CL001	**V2192500**	Ceramic Resonator	8.4672M CST8.46MT				01
CN101	**VK024900**	Wire Trap	52147 5P TE				01
CN102	**VF728300**	Wire Trap	52147 6P TE				01
CN501	**VK024800**	Wire Trap	52147 4P TE				01
CN601	**VF728300**	Wire Trap	52147 6P TE				01
CN701	**VK025600**	Wire Trap	52147 12P TE				01

*: New Parts

RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	CN702	**VK025800**	Wire Trap	52147 14P TE				01
	D0601	**VB941200**	Diode	1SS133,1SS176				01
	IC101	**XU947C00**	IC	HG73C205AFD		SWX00B		09
	IC102	**XT333A00**	IC	UPC29M33HF		REGULATOR +3.3V		03
	IC103	**XR902A00**	IC	IC-PST591D-2		RESET		02
*	IC201	**XY539100**	IC			ROM 32M PROGRAM/WAVE		
*	IC201	**XY539200**	IC					
*	IC202	**XY541100**	IC	M27C800-100F1		MASK 8M PROGRAM		
*	IC301	**XW486A00**	IC	M5M51008CFP-55H		SRAM 1M		
*	IC301	**XY909A00**	IC	UPD431000AGW-70LL				
*	IC302	**XW486A00**	IC	M5M51008CFP-55H		SRAM 1M		
*	IC302	**XY909A00**	IC	UPD431000AGW-70LL				
	IC501	**XR998A00**	IC	UPD6379AGR		DAC		04
	IC502	**XC520A00**	IC	UPC4570C		OP AMP		01
	IC601	**VG181900**	Photo Coupler	PC-900V				03
	IS201	**VK863100**	IC Socket	DICF-42CS-E				03
	IS202	**VK863100**	IC Socket	DICF-42CS-E				03
	J0104	**VA078900**	Jumper Wire	0.55				
	J0105	**VA078900**	Jumper Wire	0.55				
	J0201	**VA078900**	Jumper Wire	0.55				
	J0501	**VA078900**	Jumper Wire	0.55				
	J0601	**VA078900**	Jumper Wire	0.55				
	J0701	**VA078900**	Jumper Wire	0.55				
	L0101	**VB835000**	Coil	FL5R200QNT 20uH				01
	L0102	**VB835000**	Coil	FL5R200QNT 20uH				01
	L0101	**VF968800**	Coil	SBT-0260TF 60uH				01
	L0102	**VF968800**	Coil	SBT-0260TF 60uH				01
	L0103	**VA078900**	Jumper Wire	0.55				
	L0104	**VA078900**	Jumper Wire	0.55				
	L0105	**VB835000**	Coil	FL5R200QNT 20uH				01
	-0109	**VB835000**	Coil	FL5R200QNT 20uH				01
	L0105	**VF968800**	Coil	SBT-0260TF 60uH				01
	-0109	**VF968800**	Coil	SBT-0260TF 60uH				01
	R0101	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0102	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	R0103	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R0104	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0108	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0110	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0111	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0112	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0114	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0115	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0116	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0117	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
	R0118	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
	R0119	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0301	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0302	**HF755100**	Carbon Resistor	100.0 1/4 J				01
	R0501	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
	R0502	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
	R0503	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
	-0508	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
	R0601	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	R0604	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	R0605	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R0607	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
	R0608	**HF756270**	Carbon Resistor	2.7K 1/4 J				01
	R0609	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R0610	**HF756100**	Carbon Resistor	1.0K 1/4 J				01
	R0712	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	-0721	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	RA701	**VF238600**	Resistor Array	RGLE8X473J				01
	TR601	**IC174070**	Transistor	2SC1740S R,S				01
	TR602	**IC174070**	Transistor	2SC1740S R,S				01
*		**V5478400**	Circuit Board	LCD		(XY486B0)		
	C0707	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0708	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	C0709	**VC694800**	Semiconductive Cera. Cap.	0.1 25V Z				01
	CN001	**VI879000**	Cable Holder	51048 12P TE				01

*: New Parts

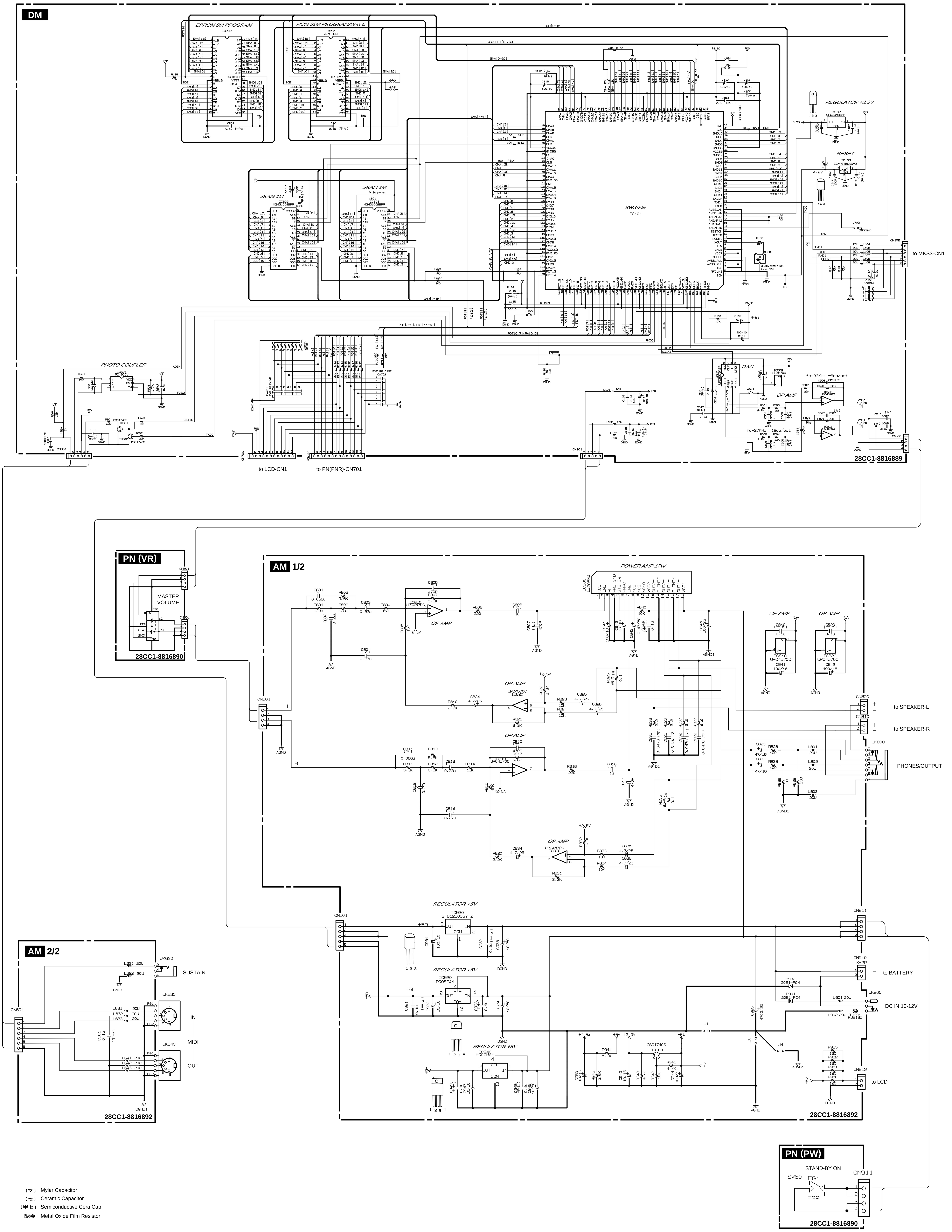
RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	IC701	**XV226A00**	IC	KS0066U-10B	LCD DRIVER		05
	R0723	**HF755220**	Carbon Resistor	220.0 1/4 J			01
	R0724	**HF757910**	Carbon Resistor	91.0K 1/4 J			01
	R0725	**HF754680**	Carbon Resistor	68.0 1/4 J			01
	RA702	**V5302400**	Resistor Array	RGLE5V222J			01
	TH701	**VR346900**	Thermistor	ERTD2FGJ801S 800			03
	WH200	--	Connector Assembly	DM-LCD 12P	(V538980)		
		VV583900	Circuit Board	MK-H	(VV70120)(XR565B0)		09
		VV437800	Diode	1N4148(DO-34)			01
		VK025600	Wire Trap	52147 12P TE			01
		VK024900	Wire Trap	52147 5P TE			01
		VV583800	Circuit Board	MK-L	(VV70110)(XR564B0)		09
		VV437800	Diode	1N4148(DO-34)			01
		VK025600	Wire Trap	52147 12P TE			01
		VK025100	Wire Trap	52147 7P TE			01
		V2404900	Circuit Board	MKS3	(XU878B0)		10
		--	Vibration-proof Tape	10X64X0.5	(VK34680)		
		VA078900	Jumper Wire	0.55			
	C1	**FG651220**	Ceramic Capacitor-SL	22P 50V J			01
	C1	**VR027400**	Ceramic Capacitor-SL	22P 63V J			01
	C2	**FG651220**	Ceramic Capacitor-SL	22P 50V J			01
	C2	**VR027400**	Ceramic Capacitor-SL	22P 63V J			01
	C3	**UR828100**	Electrolytic Cap.	100.00 10.0V			01
	C4	**VD930900**	Semiconductive Cera. Cap.	0.1 25V M			01
	C4	**VM902400**	Semiconductive Cera. Cap.	0.1 25V Z			01
	CA1	**VP755200**	Ceramic Capacitor Array	100P 50V K			02
	CA2	**VT487100**	Ceramic Capacitor Array	470P X12			02
	CL1	**VN002100**	Ceramic Resonator	CST8.00MTW140			02
	CL1	**VQ305500**	Ceramic Resonator	8.00M EFOEC8004T3			02
	CN1	**VF728300**	Wire Trap	52147 6P TE			01
	CN2	**VK025600**	Wire Trap	52147 12P TE			01
	CN3	**VK025100**	Wire Trap	52147 7P TE			01
	CN4	**VK024900**	Wire Trap	52147 5P TE			01
	IC1	**XR951A00**	IC	HD63B05V0F07P	CPU		06
	R1	**HF456470**	Carbon Resistor	4.7K 1/4 J			01
	R1	**VL631400**	Carbon Resistor	4.7K 1/6 J			01
	R2	**HF456470**	Carbon Resistor	4.7K 1/4 J			01
	R2	**VL631400**	Carbon Resistor	4.7K 1/6 J			01
	R3	**HF457470**	Carbon Resistor	47.0K 1/4 J			01
	R3	**VL632600**	Carbon Resistor	47.0K 1/6 J			01
	RA1	**VH373200**	Resistor Array	RGLE12X473J			01
*		**V5345900**	Circuit Board	PN	(XY361A0)		
	CN501	**VI878200**	Cable Holder	51048 4P TE			01
	CN701	**VI879200**	Cable Holder	51048 14P TE			01
	CN703	**VI878700**	Cable Holder	51048 9P TE			01
	CN704	**VI878700**	Cable Holder	51048 9P TE			01
	CN705	**VI878200**	Cable Holder	51048 4P TE			01
	CN706	**VI878200**	Cable Holder	51048 4P TE			01
	CN801	**VI878200**	Cable Holder	51048 4P TE			01
	CN911	**VI878200**	Cable Holder	51048 4P TE			01
	D0001	**VB941200**	Diode	1SS133,1SS176			01
	-0008	**VB941200**	Diode	1SS133,1SS176			01
	SW060	**VY980400**	Push Switch	SDDLB1 J,UC,CEE	STANDBY/ON		03
	VR001	**VZ048400**	Rotary Variable Resistor	A10.0K XV0141GPVN2	MASTER VOLUME		02
	WH010	--	Connector Assembly	DM-PN-R 14P	(V539010)		
	WH020	--	Connector Assembly	PN-R-PN-L 9P	(V539100)		
	WH030	--	Connector Assembly	PN-L-PN-C 4P	(V539110)		
	WH040	--	Connector Assembly	DM-VR 4P	(V539030)		
	WH050	--	Connector Assembly	AM-VR 4P	(V539060)		
	WH060	--	Connector Assembly	AM-PSW 4P	(V539040)		
		XV806A00	Speaker	12.0cm 4ohm 3W	WOOFER	2	07
		XV947A00	Speaker	3.0cm	TWEETER	2	03
*		**V5265000**	Back Light Assembly	B			
*		**V5263900**	LCD	RCD2143T			

*: New Parts

RANK: Japan only

■PSR-280/PSR-282 OVERALL CIRCUIT DIAGRAM 1/2（DM, AM, PN(VR, PW)）



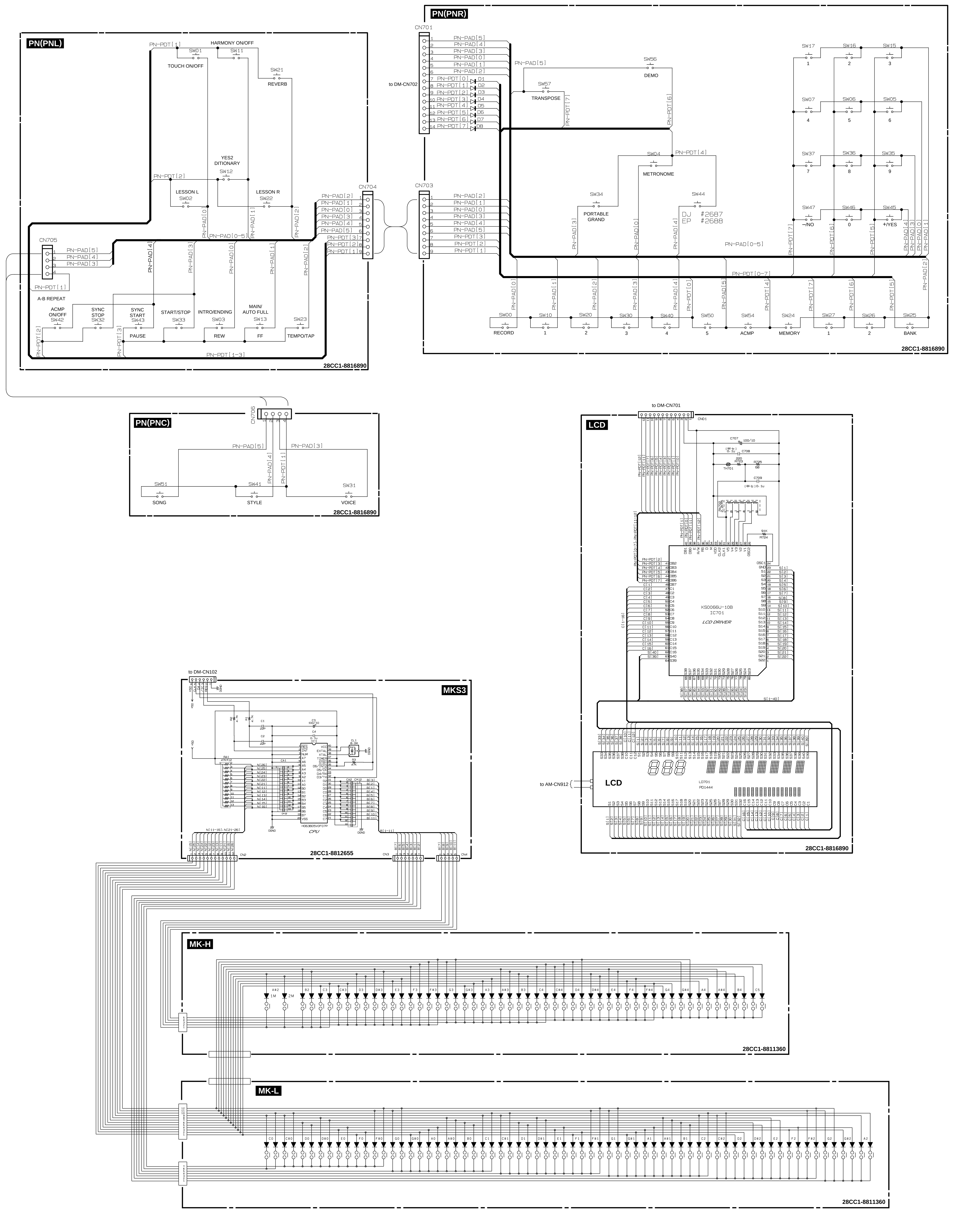
（マ）: Mylar Capacitor
（セ）: Ceramic Capacitor
（半セ）: Semiconductive Cera Cap
酸金: Metal Oxide Film Resistor

•PQ05RA1(XL450A00) REGULATOR +5V	•S-81250SGY-Z (XT625A00) REGULATOR +5V	•μPC29M33HF (XT333A00) REGULATOR +3.3V	•20E1-FC4 (VL723600) DIODE
1: IN 2: OUT 3: GND 4: ON/OFcont.	1: GND 2: INPUT 3: OUTPUT	1: INPUT 2: COMMON 3: OUTPUT	1: ANODE 2: CATHODE

Note : See parts list for details of circuit board component parts.

PSR-280/PSR282

■PSR-280/PSR-282 OVERALL CIRCUIT DIAGRAM 2/2 (PN(PNL, PNR, PNC), MK-H, MK-L, MKS3, LCD)



(半セ): Semiconductive Cera Cap

Note : See parts list for details of circuit board component parts.